**SERVICE DATA**
**FILE NO. 170-246**

# TOSHIBA

## STEREO AMPLIFIER DECK

# SJ-V22

## SPECIFICATIONS

### ■ Amplifier

| | |
|---|---|
| Rated Output Power: | 25W per channel, 10% THD, at 8 ohms, 1 kHz |
| Total Harmonic Distortion: | 0.2% at half rated output power, 1 kHz |
| Input Terminals: | MIC (Mono, 6.3mm diameter), CD, PHONO |
| Output Terminals: | Headphones, speakers, turntable power souce |
| Input/Output Terminal: | Tuner |
| Graphic Equalizer: | Center frequencies: 63 Hz, 250 Hz, 1 kHz, 4 kHz, 12 kHz<br>Adjustment range: ±10 dB |
| Signal-to-noise Ratio: | Phono: 72 dB CD: 85 dB |

### ■ Cassette Deck

| | |
|---|---|
| Track System: | 4-track, 2-channel stereo |
| Recording System: | AC bias (85 kHz) |
| Heads: | Deck A: Pb: 1<br>Deck B: Rec/Pb: 1 Erase: 1 |
| Wow and Flutter: | 0.07% (WRMS) |
| Frequency Response: | 40-16,000 Hz (Chrome position tape) |
| Signal-to-noise Ratio: | 56 dB |
| Motors: | Capstan motor (electronically controlled DC type): 2<br>Reel motor (DC motor): 2 |

### ■ General

| | |
|---|---|
| Power Supply: | 220V ∿, 50 Hz (Europe, Germany)<br>240V ∿, 50 Hz (U.K., Australia) |
| Power Consumption: | 57 watts |
| Dimensions: | 340(W) x 188.5(H) x 250(D) mm |
| Weight: | 5.5 kg |

Specification are subject to change without notice.

TE, TD, TU, AY

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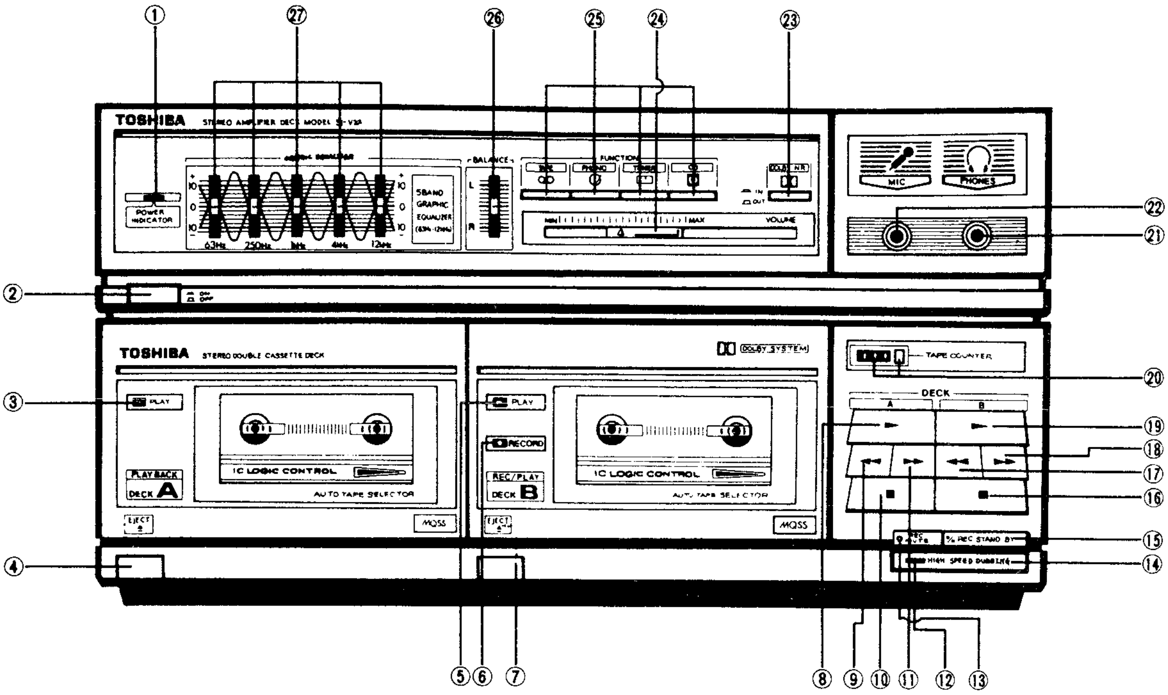
# 1. OPERATING CONTROLS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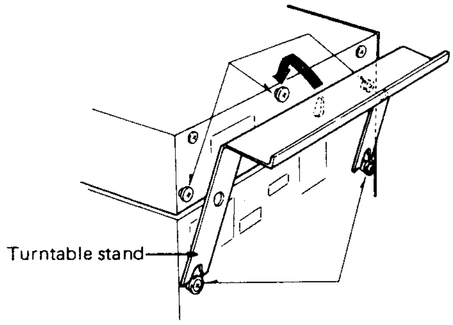
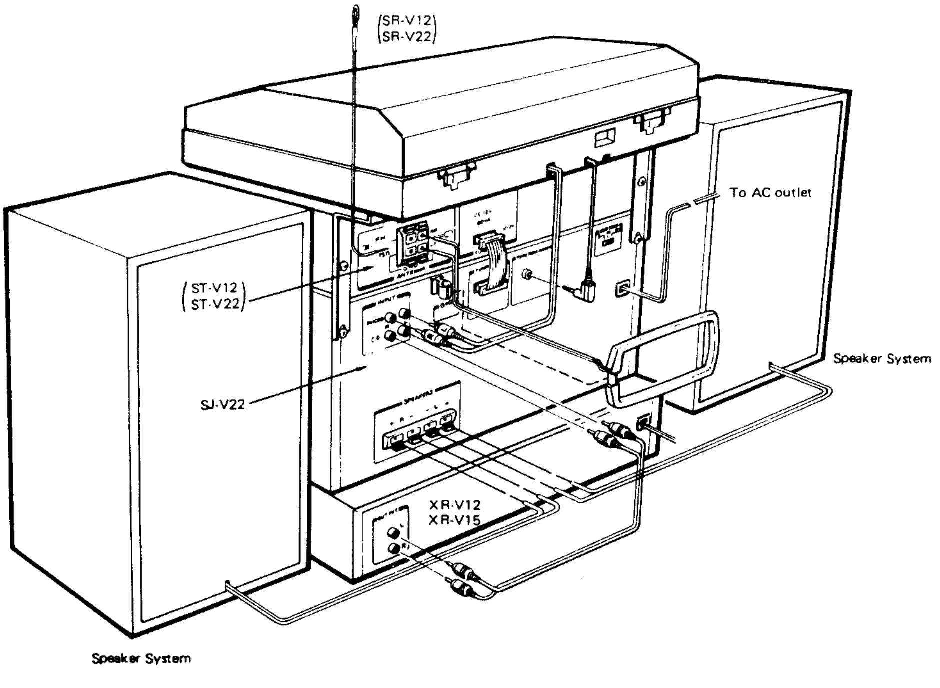
⑧ ⑨ ⑩ ⑪ ⑫ ⑬
⑭
⑮
⑯
⑰
⑱
⑲
⑳
TOSHIBA
POWER INDICATOR
63Hz
250Hz
1kHz
4kHz
12kHz
5BAND GRAPHIC EQUALIZER
BALANCE
L
R
FUNCTION
TAPE
PHONO
TUNER
CD
DOLBY NR
IN
OUT
MIN
MAX
VOLUME
MIC
PHONES
ON
OFF
STEREO DOUBLE CASSETTE DECK
PLAY
PLAYBACK DECK A
IC LOGIC CONTROL
AUTO TAPE SELECTOR
EJECT
MQSS
DOLBY SYSTEM
RECORD
REC/PLAY DECK B
TAPE COUNTER
DECK
A
B
REC STAND BY
HIGH SPEED DUBBING


Turntable stand


(SR-V12
SR-V22)
To AC outlet
(ST-V12
ST-V22)
SJ-V22
Speaker System
XR-V12
XR-V15
Speaker System

① **POWER Indicator**

② **POWER Switch**

③ **PLAY Indicator (Deck A)**

④ **EJECT Button (Deck A)**
Press to open the cassette door.

⑤ **PLAY Indicator (Deck B)**

⑥ **RECORD Indicator**

⑦ **EJECT Button (Deck B)**

⑧ **▶ PLAY Button (Deck A)**

⑨ **◀◀ REWIND Button (Deck A)**
Press to wind the tape rapidly backward and to use the MQSS function (see page 8).

⑩ **■ STOP Button (Deck A)**
Press to stop tape transport.

⑪ **▶▶ FAST FORWARD Button (Deck A)**
Press to wind the tape rapidly forward and to use the MQSS function (see page 8).

⑫ **HIGH SPEED DUBBING Indicator**

⑬ **O REC MUTE Button**

⑭ **HIGH SPEED DUBBING Button**

⑮ **●/❚❚ REC STAND BY Button**
Press to switch to the recording stand by mode (only DECK B) in which the RECORD indicator flashes on and off. From this mode, actual recording is started by pressing the play button alone.
During recording, press this button to switch to the pause mode (RECORD indicator flashes on and off). To resume recording from that point, press the play button.

⑯ **■ STOP Button (Deck B)**

⑰ **◀◀ REWIND Button (Deck B)**

⑱ **▶▶ FAST FORWARD Button (Deck B)**

⑲ **▶ PLAY Button (Deck B)**

⑳ **TAPE COUNTER and Reset Button**
Use this counter to determine the present location on cassettes in DECK B.

㉑ **PHONES Jack**
A set of stereo headphones having a 6.3mm plug can be connected to this jack.

㉒ **MIC Jack**
A microphone can be connected to this jack. Turn the volume control down before inserting and removing the microphone plug.

㉓ **DOLBY NR* Button**
Depress to the IN (▭) position to make a recording using Dolby Noise Reduction or play back a Dolby NR encoded tape. This button switches Dolby NR on and off in both DECK A and B. It does not operate during dubbing

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

㉔ **VOLUME Control**

㉕ **FUNCTION Selector Buttons**
Use these buttons to listen to TAPE, PHONO, TUNER or CD.

㉖ **BALANCE Control**
This control adjusts the relative volume levels of the left and right speaker systems.

㉗ **GRAPHIC EQUALIZER Level Controls**
These level controls adjust response in the five frequency bands centered at the frequency shown above each control. Adjust these controls to produce the desired sonic effect. If no alteration of sound quality is required, set all five controls to the center "0" position. When making a recording, the level controls can be used to alter response of the sound being monitored, but the level controls have no effect on the sound being recorded.

**Note:**
Do not switch power on or plug in the power cord until all connections have been completed.
If a turntable is to be placed above the amplifier-deck and tuner, place the turntable on the turntable stand included with this unit after attaching the stand to the rear panels of the amplifier-deck and tuner. (See page. 2)

### Connecting the tuner

Connect the TUNER TERMINAL on the rear panel of this unit to the TUNER TERMINAL on the tuner (ST-V12 or ST-V22) using the connection cable included with this unit.

### Connecting the turntable

- Connect the turntable (SR-V12 or SR-V22) to the rear panel PHONO input jacks of this unit being sure left (white) and right (red) are correctly connected.
- Connect the POWER cord of the turntable to the TURNTABLE POWER SOURCE jack on the rear panel of this unit.

### Connecting the compact disc player

Use the CD jacks to connect a compact disc player.

### Connecting the speakers

- Use only speaker systems having an impedance of 8 to 16 ohms with this unit.
- Remove the speaker cable coating to expose a section of wire about 6 to 10mm long. Then twist the strands of wire together. Connect the positive (+) speaker cable to the red speaker jack and the negative (–) speaker cable to the black speaker jack.

### Connecting the AM loop antenna

- An AM loop antenna holder is located on the rear panel of this unit. Attach the loop antenna (included with this unit) to this holder and connect the loop antenna wire to the AM aerial terminals of the tuner. Then set the aerial in the angle in which reception quality is best.
- If reception is still not satisfactory, remove the antenna from the rear panel holder and place it in the location where reception quality is best. If the connection wire is not long enough, replace with a wire of sufficient length.

### Locating the unit

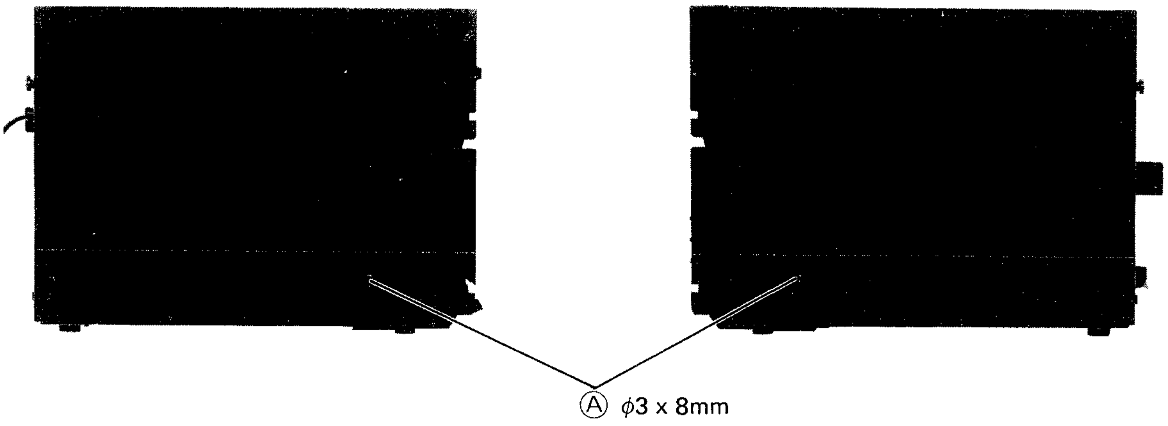
In order to obtain optimum performance from this unit, be sure to observe the following precautions when selecting its location.

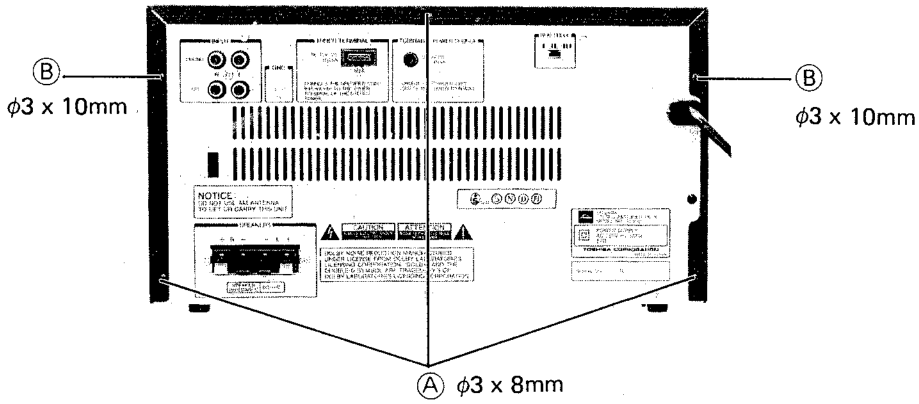
- Place the unit on a flat surface that is not subject to vibrations.
- Avoid direct sunlight and other locations that are directly exposed to heating appliances and other sources of heat.
- Avoid dusty locations.
- Avoid high humidity and locations where ventilation is poor.
- Do not expose this unit to very low temperatures.
- Do not place the unit near the speaker systems since howling may result.

# 2. DISASSEMBLY INSTRUCTIONS

## TOP COVER REMOVAL

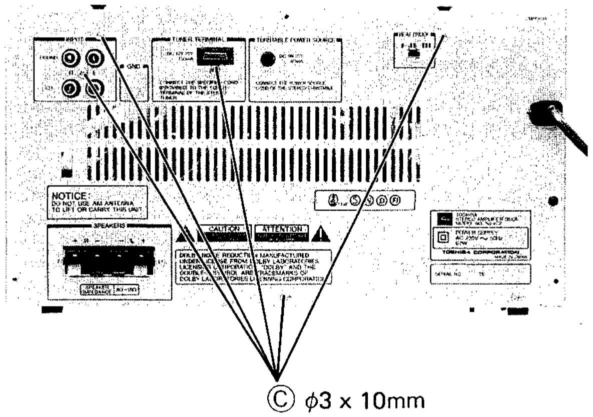
1. Remove five screws Ⓐ , two screws and two spacers Ⓑ , and the top cover removed.




Ⓑ
$\phi$3 x 10mm
Ⓑ
$\phi$3 x 10mm
NOTICE:
CAUTION
ATTENTION
Ⓐ $\phi$3 x 8mm

## JACK PLATE REMOVAL

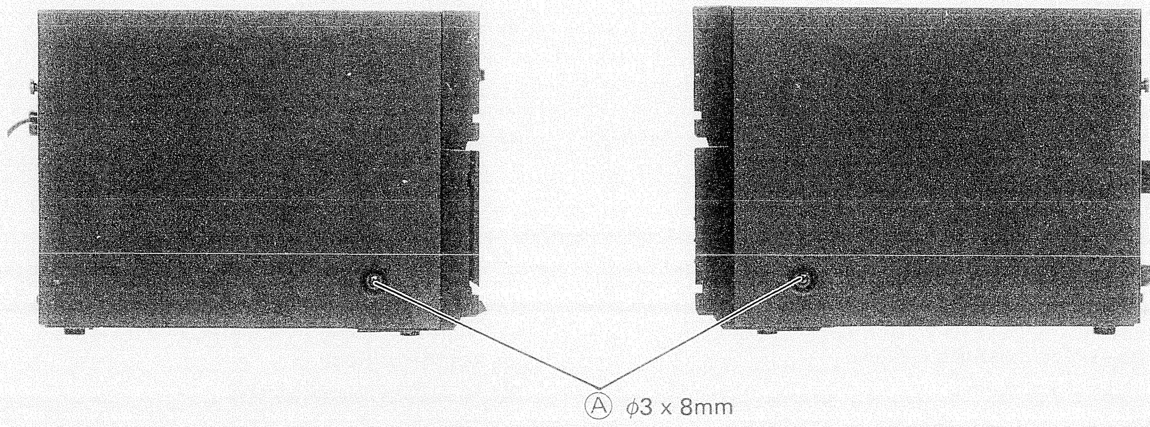
1. Remove five screws Ⓒ from jack plate, and the jack plate will be removed.

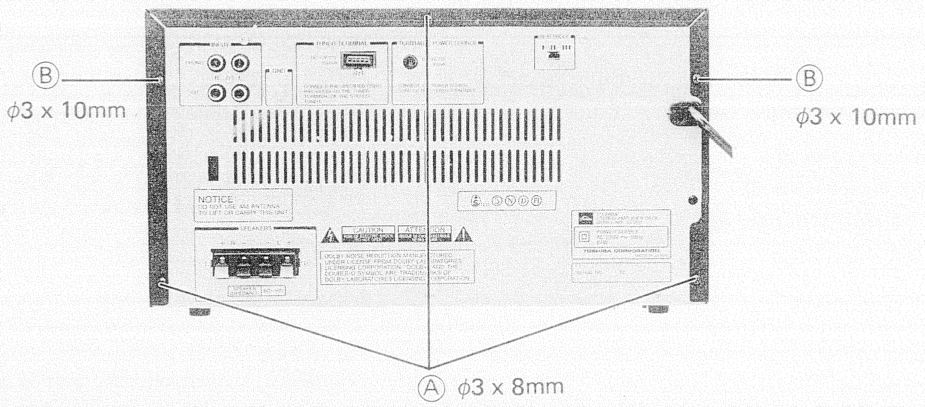

NOTICE:
CAUTION
ATTENTION
Ⓒ $\phi$3 x 10mm

# 2. DISASSEMBLY INSTRUCTIONS

## TOP COVER REMOVAL

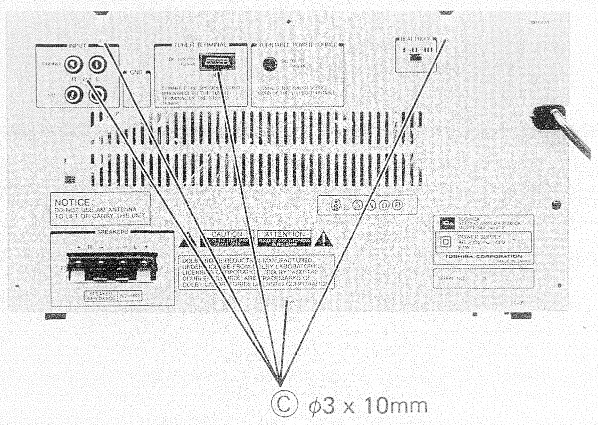
1. Remove five screws Ⓐ, two screws and two spacers Ⓑ, and the top cover removed.




Ⓑ
φ3 x 10mm
Ⓑ
φ3 x 10mm
NOTICE
CAUTION
ATTENTION
Ⓐ φ3 x 8mm

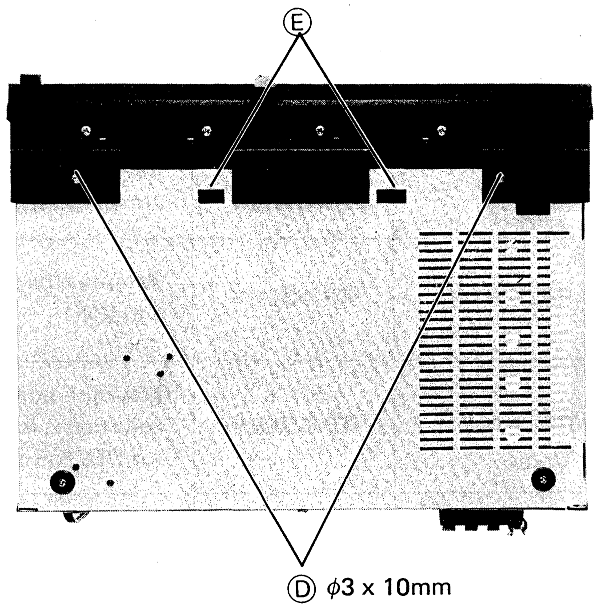
## JACK PLATE REMOVAL

1. Remove five screws Ⓒ from jack plate, and the jack plate will be removed.


NOTICE
CAUTION
ATTENTION
Ⓒ φ3 x 10mm

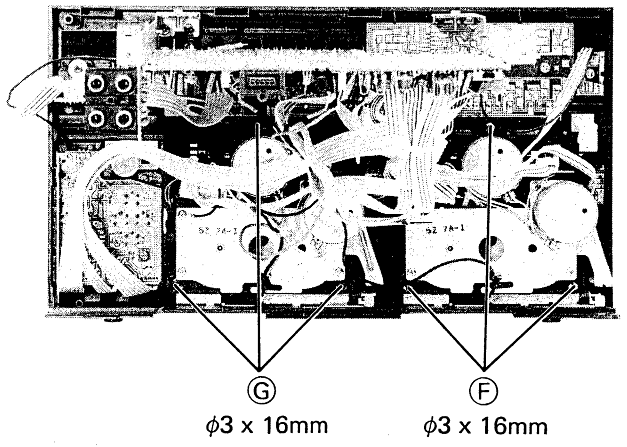
### FRONT PANEL ASSEMBLY REMOVAL

1. Remove two screws Ⓓ fixing bottom plate of front panel.
2. Remove front panel by pulling it forward while pushing two hooks Ⓔ.

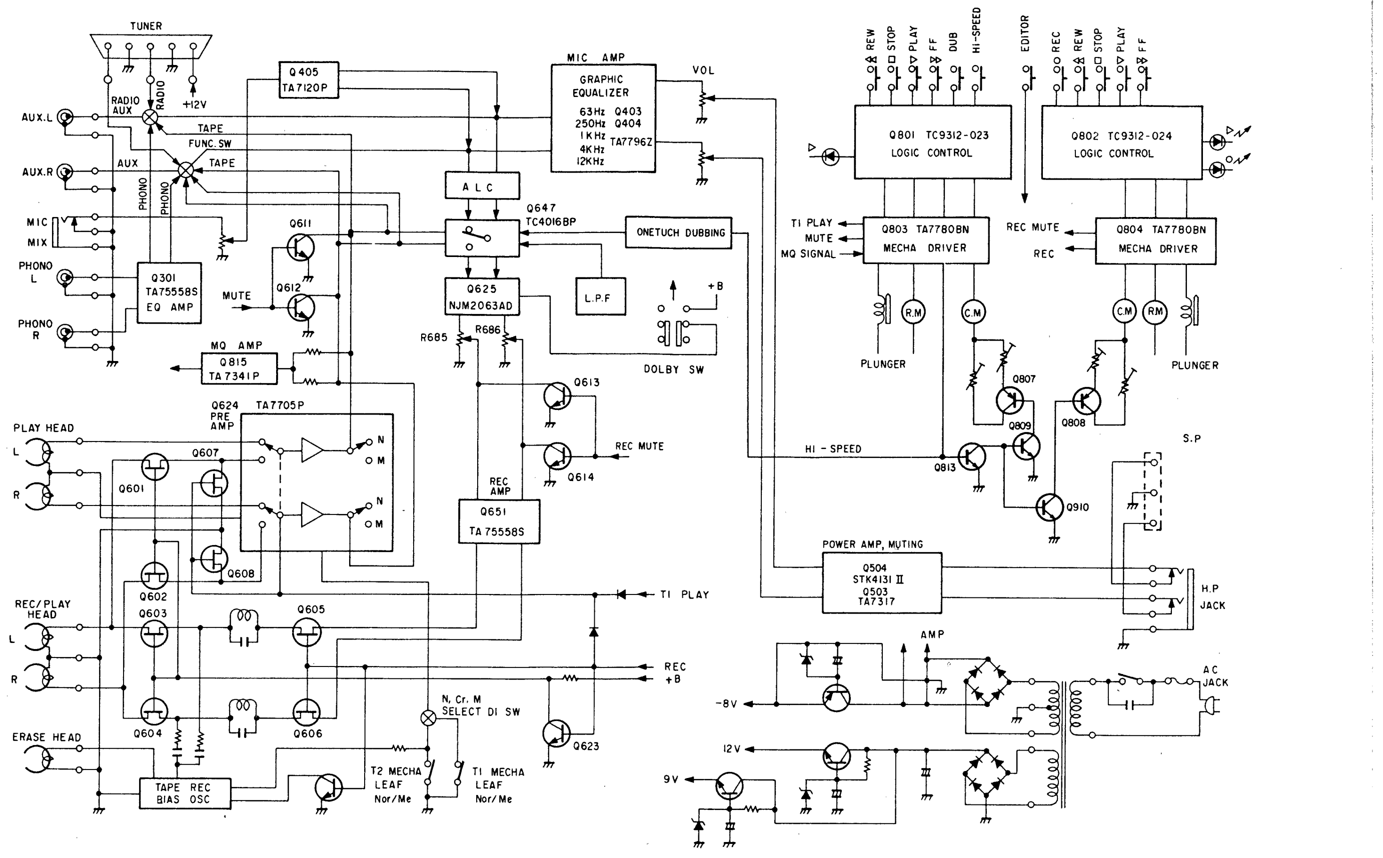


### MECHANISM ASSEMBLY REMOVAL

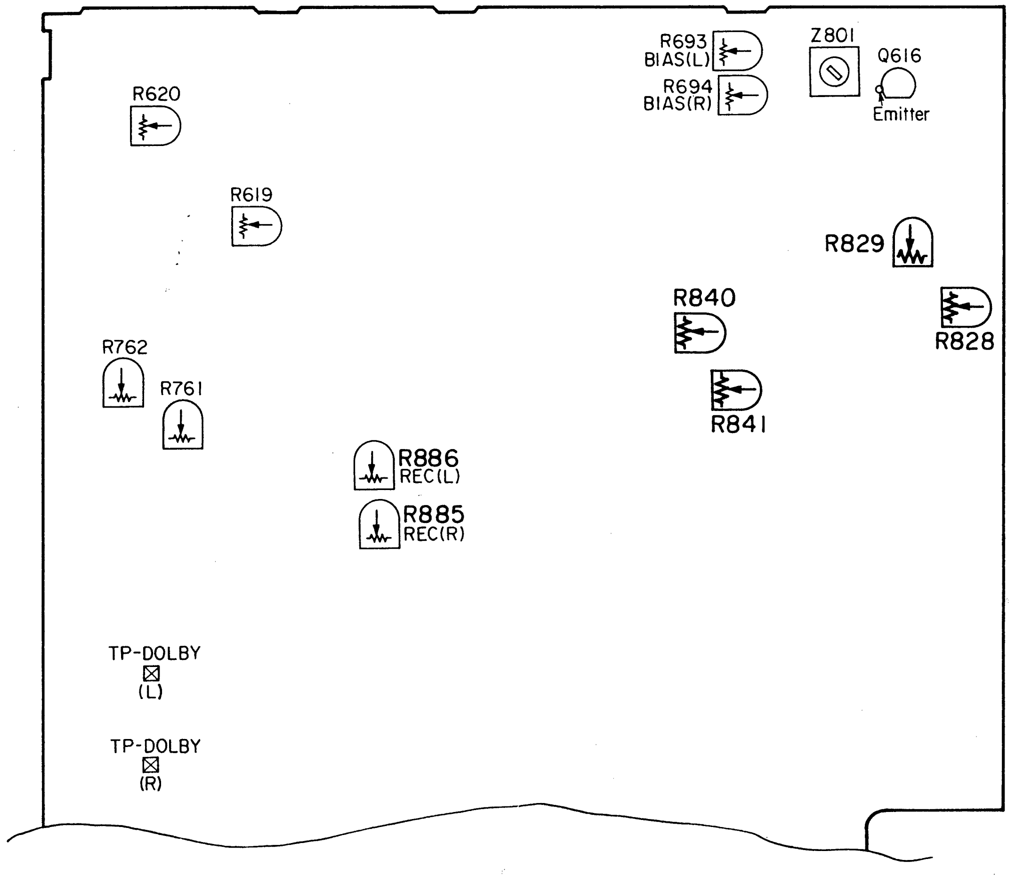
1. Open cassette holder by pushing EJECT Button.
2. Remove three screws Ⓕ, and the DECK A mechanism assembly will be removed.
3. Remove three screws Ⓖ, and the DECK B mechanism assembly will be removed.


Ⓖ
φ3 x 16mm
Ⓕ
φ3 x 16mm

## 3. BLOCK DIAGRAM

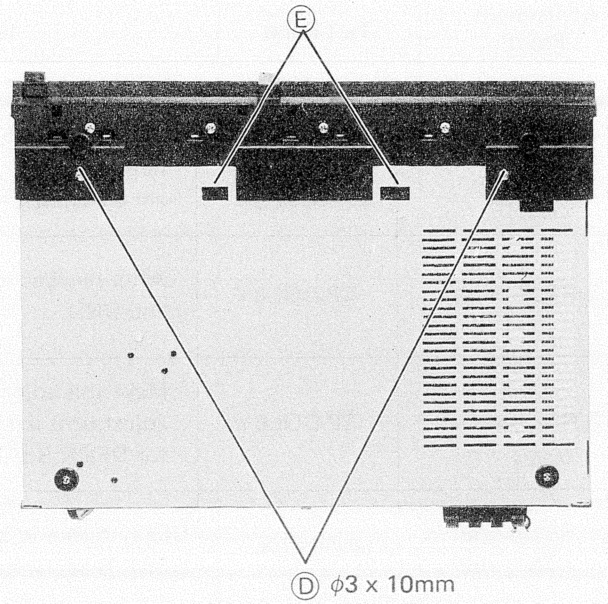

TUNER
RADIO
AUX
RADIO
+12V
AUX.L
AUX.R
AUX
TAPE
FUNC. SW
TAPE
PHONO
PHONO
MIC
MIX
PHONO L
PHONO R
Q405 TA7120P
Q301 TA75558S EQ AMP
Q611
Q612
MUTE
MQ AMP
Q815 TA7341P
MIC AMP
GRAPHIC EQUALIZER
63Hz 250Hz 1KHz 4KHz 12KHz
Q403 Q404 TA7796Z
VOL
ALC
Q647 TC4016BP
ONETUCH DUBBING
L.P.F
Q625 NJM2063AD
R685
R686
+B
DOLBY SW
Q613
Q614
REC MUTE
REC AMP
Q651 TA75558S
Q624 PRE AMP TA7705P
PLAY HEAD
L
R
Q601
Q607
Q608
N
M
Q602
Q603
REC/PLAY HEAD
Q605
Q604
Q606
ERASE HEAD
TAPE REC BIAS OSC
N, Cr, M SELECT DI SW
T2 MECHA LEAF Nor/Me
T1 MECHA LEAF Nor/Me
Q623
T1 PLAY
REC
+B
REW
STOP
PLAY
FF
DUB
HI-SPEED
EDITOR
REC
REW
STOP
PLAY
FF
Q801 TC9312-023 LOGIC CONTROL
Q802 TC9312-024 LOGIC CONTROL
T1 PLAY
MUTE
MQ SIGNAL
Q803 TA7780BN MECHA DRIVER
REC MUTE
REC
Q804 TA7780BN MECHA DRIVER
R.M
C.M
C.M
RM
PLUNGER
PLUNGER
Q807
Q809
Q808
HI - SPEED
Q813
Q910
S.P
POWER AMP, MUTING
Q504 STK4131 II
Q503 TA7317
H.P JACK
AMP
-8V
12V
9V
AC JACK

## 4. ADJUSTMENTS


R693 BIAS(L)
R694 BIAS(R)
Z801
Q616
Emitter
R620
R619
R829
R840
R828
R841
R762
R761
R886 REC(L)
R885 REC(R)
TP-DOLBY (L)
TP-DOLBY (R)

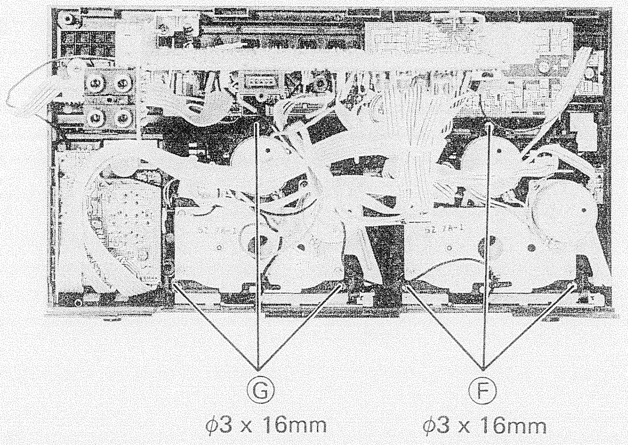
## FRONT PANEL ASSEMBLY REMOVAL

1. Remove two screws Ⓓ fixing bottom plate of front panel.
2. Remove front panel by pulling it forward while pushing two hooks Ⓔ.

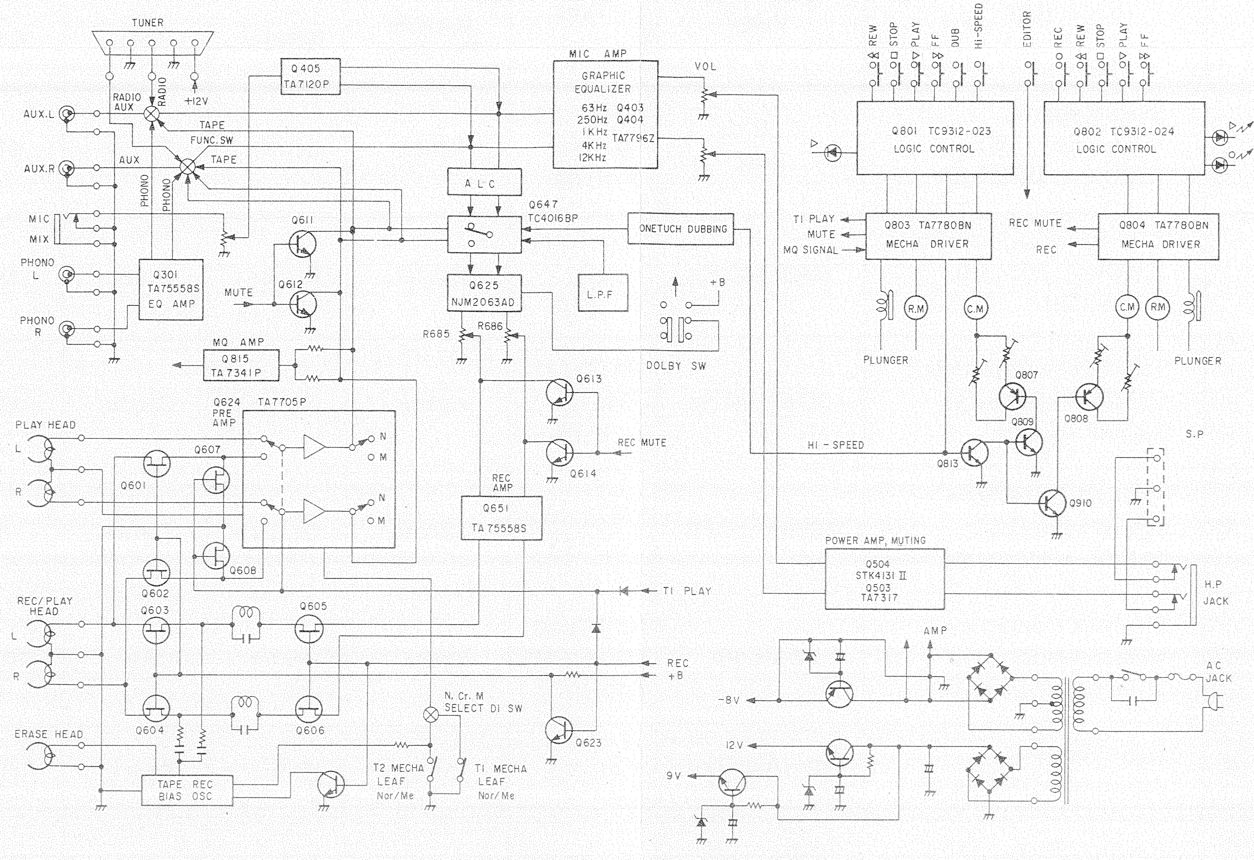


## MECHANISM ASSEMBLY REMOVAL

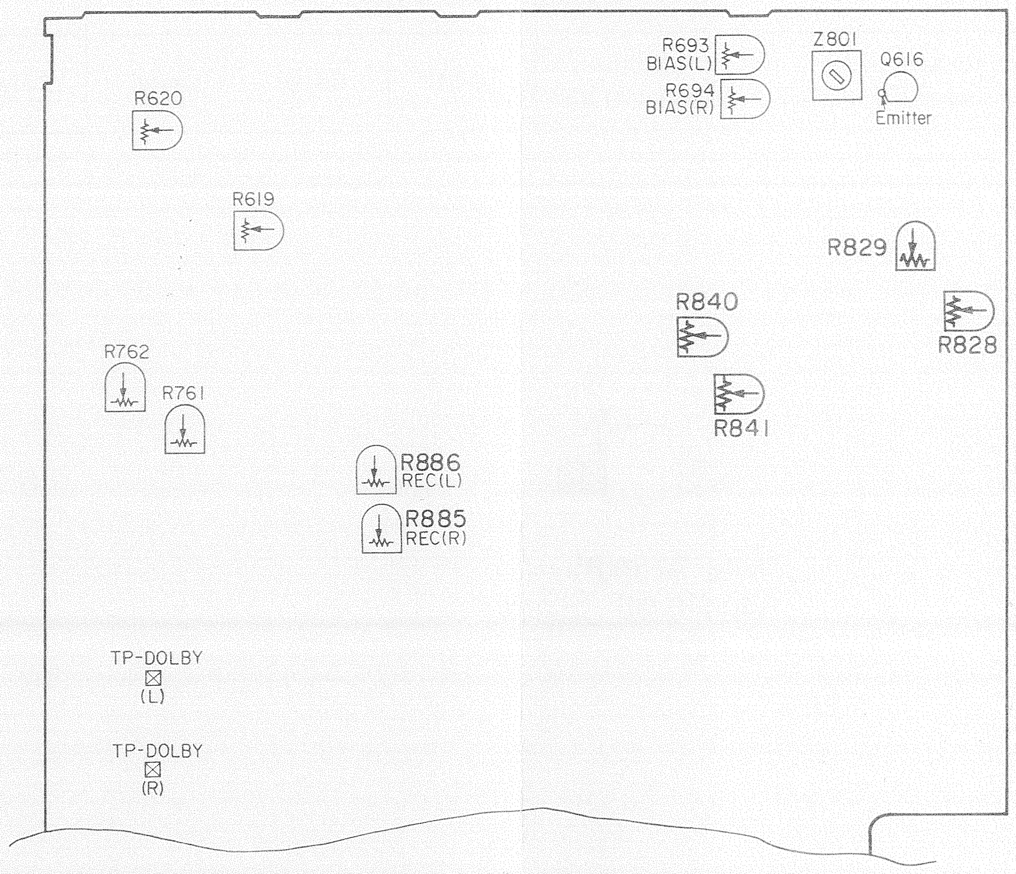
1. Open cassette holder by pushing EJECT Button.
2. Remove three screws Ⓕ, and the DECK A mechanism assembly will be removed.
3. Remove three screws Ⓖ, and the DECK B mechanism assembly will be removed.


Ⓖ
φ3 x 16mm
Ⓕ
φ3 x 16mm

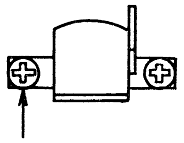
## 3. BLOCK DIAGRAM


TUNER
AUX.L
AUX.R
MIC
MIX
PHONO L
PHONO R
RADIO
AUX
TAPE
FUNC. SW
+12V
Q405 TA7120P
MIC AMP
GRAPHIC EQUALIZER
63Hz 250Hz 1KHz 4KHz 12KHz
Q403 Q404 TA7796Z
VOL
A.L.C
Q647 TC4016BP
ONETUCH DUBBING
Q611
Q612
MUTE
Q301 TA7555BS EQ AMP
Q625 NJM2063AD
L.P.F
R685
R686
DOLBY SW
MQ AMP
Q815 TA7341P
Q624 PRE AMP
TA7705P
PLAY HEAD
Q601
Q607
Q608
Q613
Q614
REC MUTE
REC AMP
Q651 TA7555BS
REC/PLAY HEAD
Q602
Q603
Q604
Q605
Q606
ERASE HEAD
TAPE REC BIAS OSC
N. Cr. M SELECT DI SW
T2 MECHA LEAF Nor/Me
T1 MECHA LEAF Nor/Me
Q623
T1 PLAY
REC +B
REW
STOP
PLAY
FF
DUB
HI-SPEED
EDITOR
REC
Q801 TC9312-023 LOGIC CONTROL
Q802 TC9312-024 LOGIC CONTROL
T1 PLAY
MUTE
MQ SIGNAL
Q803 TA7780BN MECHA DRIVER
REC MUTE
REC
Q804 TA7780BN MECHA DRIVER
PLUNGER
R.M
C.M
Q807
Q808
Q809
Q810
Q813
HI-SPEED
S.P
POWER AMP, MUTING
Q504 STK4131 II
Q503 TA7317
H.P JACK
AMP
-9V
12V
9V
AC JACK

## 4. ADJUSTMENTS

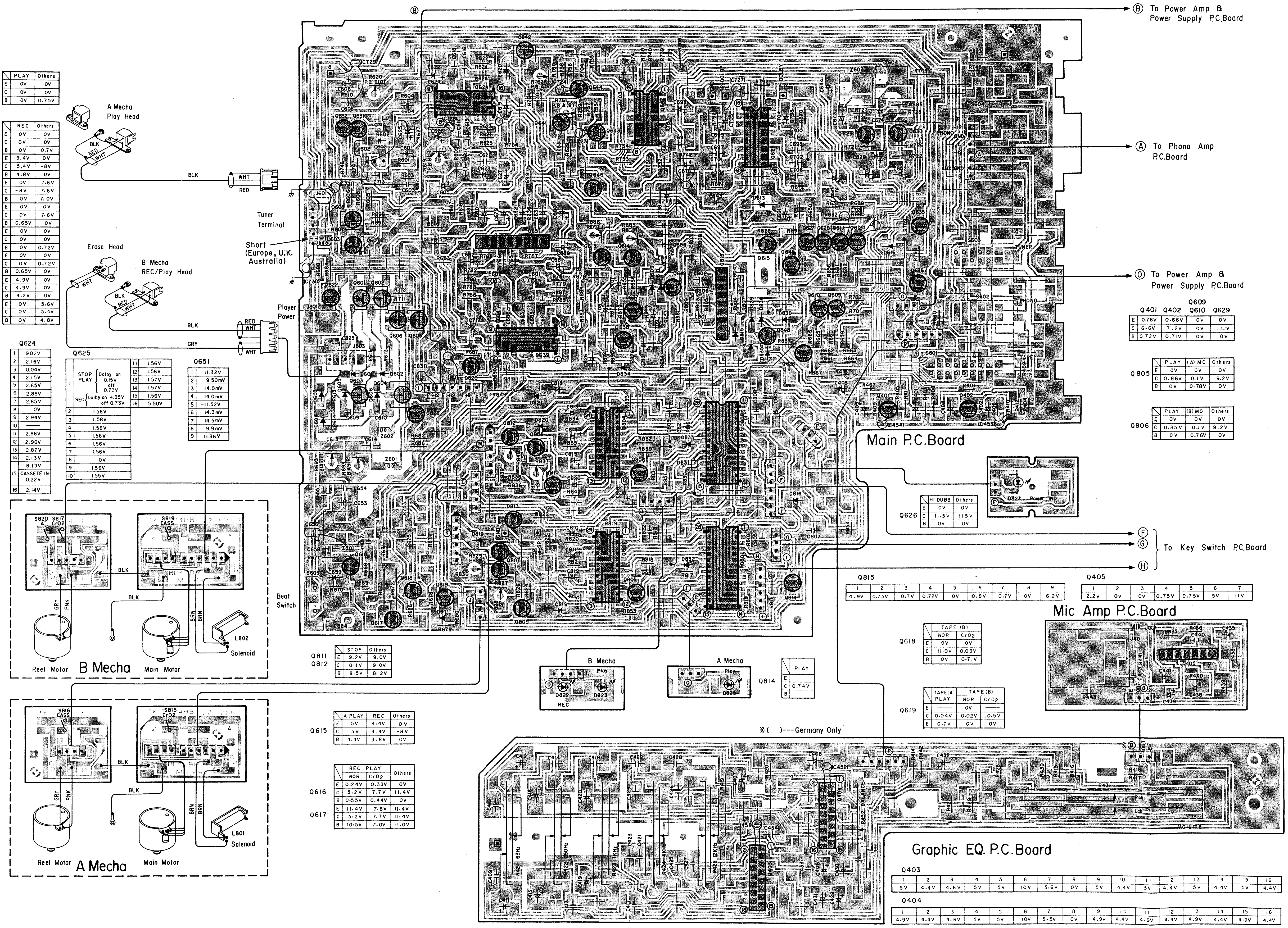

R693 BIAS(L)
R694 BIAS(R)
Z801
Q616
Emitter
R620
R619
R829
R840
R828
R841
R762
R761
R886 REC(L)
R885 REC(R)
TP-DOLBY (L)
TP-DOLBY (R)

|  | Item | Reference Value | Tape | Volume |  |  | Switch |  | Adjustment Point | Test Point | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  | Graphic Equalizer | Balance | Main | Dolby | Beat Proof |  |  |  |
| 1 | Head Azimuth Adjustment FWD [DECK A, DECK B] | L, R ch Peak | MTT-114 10 kHz −10 dB | Center | Center | Center | OUT | II (Center) | Head Screw (Left) | TP-DOLBY | After adjustment, apply screw lock at head screw. If L and R ch peak values are different, take the midium value. |
| 2 | Tape Speed Adjustment [DECK A, DECK B] High Speed | 6000 ±60 Hz | MTT-111 3 kHz −10 dB | Center | Center | Center | OUT | II (Center) | R829, R840 | TP-DOLBY | After playback, short-circuit TP HI-SP and GND. |
|  | Tape Speed Adjustment [DECK A, DECK B] Standard Speed | 3000 ±30 Hz | MTT-111 3 kHz −10 dB | Center | Center | Center | OUT | II (Center) | R828, R841 | TP-DOLBY | Make this adjustment after high speed adjustment is completed 0 ∿ 30 Hz for DECK B to A. |
| 3 | Playback Sensitivity Adjustment FWD [DECK A, DECK B] | 100mV ±1 dB | MTT-150 DOLBY | Center | Center | Center | IN | II (Center) | B ← R619, 620<br>A ← R761, 762 | TP-DOLBY | DECK A should be adjusted after DECK B adjustment. |
| 4 | Playback Frequency Measurement [DECK A, DECK B] | 0 ±4 dB | MTT-255C 10k/315 Hz −10 dB | Center | Center | Center | OUT | II (Center) | – | TP-DOLBY | 10 kHz level to 315 Hz. |
| 5 | Osc. Frequency Adjustment [DECK B] | 87 ±0.5 kHz | AC-512 | Center | Center | Center | OUT | II (Center) | Z801 | Q616 Emitter |  |
| 6 | Rec/Play Frequency Characteristic Adjustment [DECK B] | 0 ±1 dB | AC-512 | Center | Center | Center | OUT | II (Center) | R693, R694 | TP-DOLBY | 333 Hz – 10 kHz 50mV (−26 dBV) input from CD. |
| 7 | Rec/Play Sensitivity Adjustment [DECK B] | Monitor Output ±1 dB | AC-512 | Center | Center | Center | OUT | II (Center) | R885, R886 | TP-DOLBY | 333 Hz 500mV (−6 dBV) input from CD. |



Head Azimuth Adjustment Screw

# 5. ELECTRICAL PARTS LOCATIONS


Ⓑ To Power Amp & Power Supply P.C.Board
Ⓐ To Phono Amp P.C.Board
Ⓞ To Power Amp & Power Supply P.C.Board
Ⓕ Ⓖ Ⓗ To Key Switch P.C.Board
A Mecha Play Head
Erase Head
B Mecha REC/Play Head
BLK
RED
WHT
GRY
Tuner Terminal
Short (Europe, U.K. Australia)
Player Power
Beat Switch
Main P.C.Board
D827 Power IND
Mic Amp P.C.Board
MIK Jack
J401
Graphic EQ. P.C.Board
Volume
Lch
Rch
B Mecha
Play
REC
D822
D823
A Mecha
D825
S820 A
S817 CrO2
S819 CASS
S816 CASS
S815 CrO2
PNK
BRN
L802
L801
Solenoid
Reel Motor
Main Motor
B Mecha
A Mecha
63Hz
250Hz
1KHz
4KHz
12KHz
R432 BALANCE

※( )---Germany Only

| | | PLAY | Others |
|---|---|---|---|
| Q611<br>Q612 | E | 0V | 0V |
| | C | 0V | 0V |
| | B | 0V | 0.75V |

| | | REC | Others |
|---|---|---|---|
| Q613<br>Q614 | E | 0V | 0V |
| | C | 0V | 0V |
| | B | 0V | 0.7V |
| Q620 | E | 5.4V | 0V |
| | C | 5.4V | -8V |
| | B | 4.8V | 0V |
| Q622 | E | 0V | 7.6V |
| | C | -8V | 7.6V |
| | B | 0V | 7.0V |
| Q623 | E | 0V | 0V |
| | C | 0V | 7.6V |
| | B | 0.65V | 0V |
| Q627 | E | 0V | 0V |
| | C | 0V | 0V |
| | B | 0V | 0.72V |
| Q628 | E | 0V | 0V |
| | C | 0V | 0.72V |
| | B | 0.65V | 0V |
| Q648 | E | 4.9V | 0V |
| | C | 4.9V | 0V |
| | B | 4.2V | 0V |
| Q649 | E | 0V | 5.6V |
| | C | 0V | 5.4V |
| | B | 0V | 4.8V |

Q624

| | |
|---|---|
| 1 | 9.02V |
| 2 | 2.16V |
| 3 | 0.04V |
| 4 | 2.15V |
| 5 | 2.85V |
| 6 | 2.88V |
| 7 | 2.85V |
| 8 | 0V |
| 9 | 2.94V |
| 10 | —— |
| 11 | 2.88V |
| 12 | 2.90V |
| 13 | 2.87V |
| 14 | 2.13V |
| 15 | 8.19V<br>CASSETE IN 0.22V |
| 16 | 2.14V |

Q625

| | | | |
|---|---|---|---|
| 1 | STOP PLAY { Dolby on 0.15V off 0.72V<br>REC { Dolby on 4.35V off 0.73V | 11 | 1.56V |
| | | 12 | 1.56V |
| | | 13 | 1.57V |
| | | 14 | 1.57V |
| | | 15 | 1.56V |
| | | 16 | 5.50V |
| 2 | 1.56V | | |
| 3 | 1.58V | | |
| 4 | 1.58V | | |
| 5 | 1.56V | | |
| 6 | 1.56V | | |
| 7 | 1.56V | | |
| 8 | 0V | | |
| 9 | 1.56V | | |
| 10 | 1.55V | | |

Q651

| | |
|---|---|
| 1 | 11.32V |
| 2 | 9.50mV |
| 3 | 14.0mV |
| 4 | 14.0mV |
| 5 | -11.52V |
| 6 | 14.3mV |
| 7 | 14.5mV |
| 8 | 9.9mV |
| 9 | 11.36V |

| | | STOP | Others |
|---|---|---|---|
| Q811<br>Q812 | E | 9.2V | 9.0V |
| | C | 0.1V | 9.0V |
| | B | 8.5V | 8.2V |

| | | A PLAY | REC | Others |
|---|---|---|---|---|
| Q615 | E | 5V | 4.4V | 0V |
| | C | 5V | 4.4V | -8V |
| | B | 4.4V | 3.8V | 0V |

| | | REC PLAY | | Others |
|---|---|---|---|---|
| | | NOR | CrO2 | |
| Q616 | E | 0.24V | 0.33V | 0V |
| | C | 5.2V | 7.7V | 11.4V |
| | B | 0.55V | 0.44V | 0V |
| Q617 | E | 11.4V | 7.8V | 11.4V |
| | C | 5.2V | 7.7V | 11.4V |
| | B | 10.5V | 7.0V | 11.0V |

| | | PLAY |
|---|---|---|
| Q814 | E | |
| | C | 0.74V |
| | B | |

| | | TAPE (B) | |
|---|---|---|---|
| | | NOR | CrO2 |
| Q618 | E | 0V | 0V |
| | C | 11.0V | 0.03V |
| | B | 0V | 0.71V |

| | | TAPE(A) PLAY | TAPE(B) | |
|---|---|---|---|---|
| | | | NOR | CrO2 |
| Q619 | E | —— | 0V | —— |
| | C | 0.04V | 0.02V | 10.5V |
| | B | 0.7V | 0V | 0V |

| | | HI DUBB | Others |
|---|---|---|---|
| Q626 | E | 0V | 0V |
| | C | 11.5V | 11.5V |
| | B | 0V | 0V |

Q815

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| 4.9V | 0.75V | 0.7V | 0.72V | 0V | -0.8V | 0.7V | 0V | 6.2V |

Q405

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| 2.2V | 0V | 0V | 0.75V | 0.75V | 5V | 11V |

| | Q401 | Q402 | Q609<br>Q610 | Q629 |
|---|---|---|---|---|
| E | 0.76V | 0.66V | 0V | 0V |
| C | 6.6V | 7.2V | 0V | 11.1V |
| B | 0.72V | 0.71V | 0V | 0V |

| | | PLAY | (A) MQ | Others |
|---|---|---|---|---|
| Q805 | E | 0V | 0V | 0V |
| | C | 0.86V | 0.1V | 9.2V |
| | B | 0V | 0.78V | 0V |

| | | PLAY | (B) MQ | Others |
|---|---|---|---|---|
| Q806 | E | 0V | 0V | 0V |
| | C | 0.85V | 0.1V | 9.2V |
| | B | 0V | 0.76V | 0V |

Q403

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5V | 4.4V | 4.6V | 5V | 5V | 10V | 5.6V | 0V | 5V | 4.4V | 5V | 4.4V | 5V | 4.4V | 5V | 4.4V |

Q404

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.9V | 4.4V | 4.6V | 5V | 5V | 10V | 5.5V | 0V | 4.9V | 4.4V | 4.9V | 4.4V | 4.9V | 4.4V | 4.9V | 4.4V |

Q801

| | | Others |
|---|---|---|
| 1 | 0V | —— |
| 2 | 3V | —— |
| 3 | 5.7V | —— |
| 4 | STOP, FF 5.7V FWD 6.2V | 0V |
| 5 | STOP, REW 5.7V REV 6.2V | 0V |
| 6 | FF. REW 5.7V | 0V |
| 7 | MQ DET 6.2V(20mS) | 0V |
| 8 | | |
| 9 | ACCIDENTAL ERASE A 5.7V | 0V |
| 10 | —— | |
| 11 | PLAY ↩5.0V | 0.74V |
| 12 | 3V | —— |
| 13 | STOP 0.16V PLAY0.2V FF REW 0.6V | —— |
| 14 | (B) PLAY DUBB 0V (B) REC 4.2V | 5.7V |
| 15 | | |
| 16 | | |
| 17 | FWD 5.4V | 0V |
| 18 | PLAY 5.5V | 0V |
| 19 | (A) (B) PLAY DUBB 0V | 5.6V |
| 20 | RELAY ASO 5.7V (200mS) | 0V |
| 21 | —— | —— |
| 22 | MQ 5.5V | 0V |
| 23 | PLAY 5.5V (68mS) | 0V |
| 24 | PLAY 5.5V | 0V |
| 25 | STOP 5.5V (180mS) | 0V |
| 26 | REW. REV 5.6V | 0V |
| 27 | FF. FWD 5.6V | 0V |
| 28 | 6.2V | |

Q802

| | | Others |
|---|---|---|
| 1 | 0V | —— |
| 2 | 3V | —— |
| 3 | 5.7V | —— |
| 4 | STOP, FF 5.7V FWD 6.2V | 0V |
| 5 | STOP, REW 5.7V REV 6.2V | 0V |
| 6 | FF. REV 5.7V | 0V |
| 7 | REC 6.2V | 0V |
| 8 | MQ DET. 6.2V(20mS) | 0V |
| 9 | TIMER REC 5.4V(300mS) | 0V |
| 10 | ACCIDENTAL ERASE A 5.7V | 0V |
| 11 | | |
| 12 | PLAY 3V | |
| 13 | PLAY 0.2V FF. REW 0.6V STOP 0.16V | |
| 14 | STOP 5.7V | 0V |
| 15 | REC 0V | 5.5V |
| 16 | REC 5.5V | 0V |
| 17 | | |
| 18 | REC 5.5V (200mS STANDBY) | 0V |
| 19 | REV 5.5V | 0V |
| 20 | FF. REW STOP 5.6V PLAY 0V REC 4.2V | —— |
| 21 | FWD 5.5V | 0V |
| 22 | MQ 5.5V | 0V |
| 23 | PLAY 5.5V (68mS) | 0V |
| 24 | PLAY 5.6V | 0V |
| 25 | STOP 5.5V (180mS) | 0V |
| 26 | REW. REV 5.6V | 0V |
| 27 | FF. FWD 5.6V | 0V |
| 28 | 6.2V | —— |

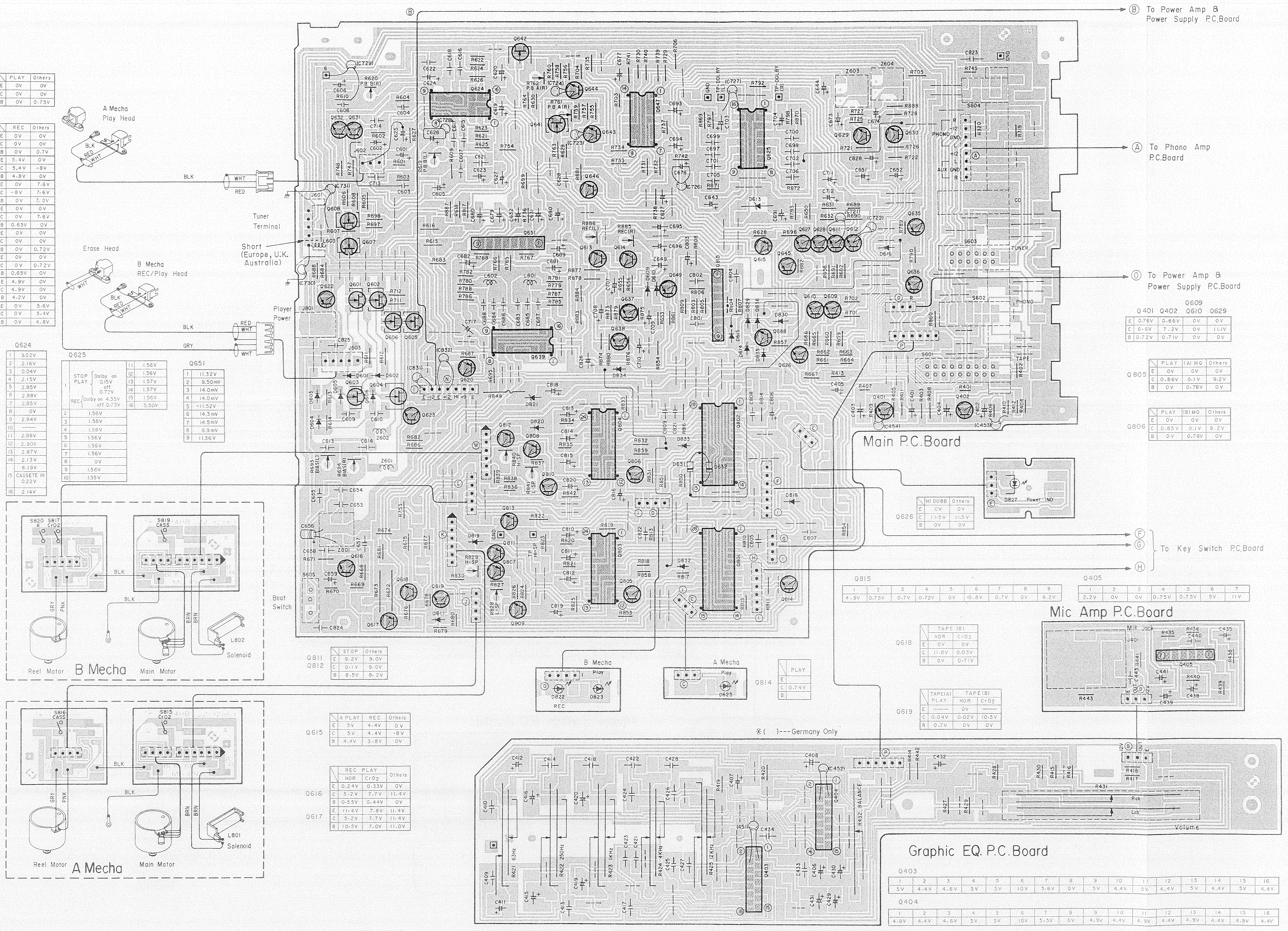
Q803

| | | Others |
|---|---|---|
| 1 | 2.6V | |
| 2 | SPEED DUBB 5.4V | 0V |
| 3 | FF FWD 5.6V SPEED DUBB 5.5V | 0V |
| 4 | REW. REV 5.6V | 0V |
| 5 | PLAY 0V FF. REW STOP/PLAY STOP 5.5V(180mS) | |
| 6 | PLAY 5.5V | 0V |
| 7 | PLAY 0.85V MQ 0.07V | 9.2V |
| 8 | PLAY 6.4V MQ 6.2V | 9.2V |
| 9 | STOP 8.6V | 0.8V |
| 10 | 0V | |
| 11 | PLAY 5.5V (68mS) | 0V |
| 12 | REW 8.2V REV 3.2V | 0V |
| 13 | STOP 0.8V | 0V |
| 14 | FWD 3.2V FF 8.2V | 0V |
| 15 | 0V | |
| 16 | 2.8V | |
| 17 | STOP 9.2V FF. REW 9.1V PLAY 9.0V DUBB 8.8V | |
| 18 | 3.5V | |
| 19 | | |
| 20 | STOP 0.16V PLAY 0.2V FF. REW 0.6V | |
| 21 | 3.6V | |
| 22 | 0V | |
| 23 | 0V | |
| 24 | 4.8V | |

Q804

| | | Others |
|---|---|---|
| 1 | 2.6V | —— |
| 2 | DUBB 5.4V | 0V |
| 3 | FF. FWD 5.6V DUBB 5.5V | 0V |
| 4 | REW. REV 5.6V | 0V |
| 5 | STOP 5.5V (180mS) | 0V |
| 6 | PLAY. REC PLAY 5.5V | 0V |
| 7 | PLAY 0.9V MQ 0.07V | 9.2V |
| 8 | PLAY 6.4V MQ 6.2V | 9.2V |
| 9 | STOP 8.6V | 0.8V |
| 10 | 0V | —— |
| 11 | PLAY. REC PLAY 5.5V (68mS) | 0V |
| 12 | REW 8.2V REV 3.2V | 0V |
| 13 | STOP 0V | 0.8V |
| 14 | FWD 3.2V FF 8.3V | 0V |
| 15 | 0V | |
| 16 | 2.8V | |
| 17 | STOP 9.2V FF. REW 9.1V PLAY 9V DUBB 8.7V | |
| 18 | 3.4V | |
| 19 | | |
| 20 | STOP 0.16V PLAY. REC PLAY 0.2V FF. REW 0.6V | |
| 21 | 3.6V | |
| 22 | 0V | |
| 23 | 0V | |
| 24 | 4.8V | |

# 5. ELECTRICAL PARTS LOCATIONS



Ⓑ To Power Amp & Power Supply P.C.Board
Ⓐ To Phono Amp P.C.Board
Ⓞ To Power Amp & Power Supply P.C.Board
Main P.C.Board
D827 Power IND
Ⓕ Ⓖ Ⓗ To Key Switch P.C.Board
Mic Amp P.C.Board
Mik Jack
Graphic EQ. P.C.Board
Volume
Rch
Lch
BALANCE
63Hz
250Hz
1KHz
4KHz
12KHz
A Mecha Play Head
Erase Head
B Mecha REC/Play Head
Tuner Terminal
Short (Europe, U.K. Australia)
Player Power
Beat Switch
BLK
RED
WHT
GRY
PNK
BRN
B Mecha
A Mecha
Reel Motor
Main Motor
Solenoid
L801
L802
S815 CrO2
S816 CASS
S817 CrO2
S819 CASS
S820 A
PHONO
AUX
TUNER
TAPE
CD
Play
REC
D822
D823
D825

※( )---Germany Only

| | | PLAY | Others |
|---|---|---|---|
| Q611<br>Q612 | E | 0V | 0V |
| | C | 0V | 0V |
| | B | 0V | 0.75V |

| | | REC | Others |
|---|---|---|---|
| Q613<br>Q614 | E | 0V | 0V |
| | C | 0V | 0V |
| | B | 0V | 0.7V |
| Q620 | E | 5.4V | 0V |
| | C | 5.4V | -8V |
| | B | 4.8V | 0V |
| Q622 | E | 0V | 7.6V |
| | C | -8V | 7.6V |
| | B | 0V | 7.0V |
| Q623 | E | 0V | 0V |
| | C | 0V | 7.6V |
| | B | 0.65V | 0V |
| Q627 | E | 0V | 0V |
| | C | 0V | 0V |
| | B | 0V | 0.72V |
| Q628 | E | 0V | 0V |
| | C | 0V | 0.72V |
| | B | 0.65V | 0V |
| Q648 | E | 4.9V | 0V |
| | C | 4.9V | 0V |
| | B | 4.2V | 0V |
| Q649 | E | 0V | 5.6V |
| | C | 0V | 5.4V |
| | B | 0V | 4.8V |

Q624

| | |
|---|---|
| 1 | 9.02V |
| 2 | 2.16V |
| 3 | 0.04V |
| 4 | 2.15V |
| 5 | 2.85V |
| 6 | 2.88V |
| 7 | 2.85V |
| 8 | 0V |
| 9 | 2.94V |
| 10 | ——— |
| 11 | 2.88V |
| 12 | 2.90V |
| 13 | 2.87V |
| 14 | 2.13V |
| 15 | 8.19V<br>CASSETE IN<br>0.22V |
| 16 | 2.14V |

Q625

| | | | |
|---|---|---|---|
| 1 | STOP PLAY { Dolby on 0.15V off 0.72V<br>REC { Dolby on 4.35V off 0.73V | 11 | 1.56V |
| 2 | 1.56V | 12 | 1.56V |
| 3 | 1.58V | 13 | 1.57V |
| 4 | 1.58V | 14 | 1.57V |
| 5 | 1.56V | 15 | 1.56V |
| 6 | 1.56V | 16 | 5.50V |
| 7 | 1.56V | | |
| 8 | 0V | | |
| 9 | 1.56V | | |
| 10 | 1.55V | | |

Q651

| | |
|---|---|
| 1 | 11.32V |
| 2 | 9.50mV |
| 3 | 14.0mV |
| 4 | 14.0mV |
| 5 | -11.52V |
| 6 | 14.3mV |
| 7 | 14.5mV |
| 8 | 9.9mV |
| 9 | 11.36V |

| | STOP | Others |
|---|---|---|
| Q811 Q812 E | 9.2V | 9.0V |
| C | 0.1V | 9.0V |
| B | 8.5V | 8.2V |

| Q615 | A PLAY | REC | Others |
|---|---|---|---|
| E | 5V | 4.4V | 0V |
| C | 5V | 4.4V | -8V |
| B | 4.4V | 3.8V | 0V |

| | | REC PLAY | | Others |
|---|---|---|---|---|
| | | NOR | CrO2 | |
| Q616 | E | 0.24V | 0.33V | 0V |
| | C | 5.2V | 7.7V | 11.4V |
| | B | 0.55V | 0.44V | 0V |
| Q617 | E | 11.4V | 7.8V | 11.4V |
| | C | 5.2V | 7.7V | 11.4V |
| | B | 10.5V | 7.0V | 11.0V |

| Q814 | PLAY |
|---|---|
| E | |
| C | 0.74V |
| B | |

| Q618 | TAPE (B) | |
|---|---|---|
| | NOR | CrO2 |
| E | 0V | 0V |
| C | 11.0V | 0.03V |
| B | 0V | 0.71V |

| Q619 | TAPE(A) PLAY | TAPE (B) | |
|---|---|---|---|
| | | NOR | CrO2 |
| E | ——— | 0V | ——— |
| C | 0.04V | 0.02V | 10.5V |
| B | 0.7V | 0V | 0V |

| Q626 | HI DUBB | Others |
|---|---|---|
| E | 0V | 0V |
| C | 11.5V | 11.5V |
| B | 0V | 0V |

Q815

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| 4.9V | 0.75V | 0.7V | 0.72V | 0V | 0.8V | 0.7V | 0V | 6.2V |

Q405

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| 2.2V | 0V | 0V | 0.75V | 0.75V | 5V | 11V |

| | Q401 | Q402 | Q609<br>Q610 | Q629 |
|---|---|---|---|---|
| E | 0.76V | 0.66V | 0V | 0V |
| C | 6.6V | 7.2V | 0V | 11.1V |
| B | 0.72V | 0.71V | 0V | 0V |

| Q805 | PLAY | (A) MQ | Others |
|---|---|---|---|
| E | 0V | 0V | 0V |
| C | 0.86V | 0.1V | 9.2V |
| B | 0V | 0.78V | 0V |

| Q806 | PLAY | (B) MQ | Others |
|---|---|---|---|
| E | 0V | 0V | 0V |
| C | 0.85V | 0.1V | 9.2V |
| B | 0V | 0.76V | 0V |

Q403

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5V | 4.4V | 4.6V | 5V | 5V | 10V | 5.6V | 0V | 5V | 4.4V | 5V | 4.4V | 5V | 4.4V | 5V | 4.4V |

Q404

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.9V | 4.4V | 4.6V | 5V | 5V | 10V | 5.5V | 0V | 4.9V | 4.4V | 4.9V | 4.4V | 4.9V | 4.4V | 4.9V | 4.4V |

Q801

| | | Others |
|---|---|---|
| 1 | 0V | ——— |
| 2 | 3V | ——— |
| 3 | 5.7V | ——— |
| 4 | STOP, FF 5.7V FWD 6.2V | 0V |
| 5 | STOP, REW 5.7V REV 6.2V | 0V |
| 6 | FF. REW 5.7V | 0V |
| 7 | MQ DET 6.2V(20mS) | 0V |
| 8 | | |
| 9 | ACCIDENTAL ERASE A 5.7V | 0V |
| 10 | ——— | |
| 11 | PLAY ↻5.0V | 0.74V |
| 12 | 3V | ——— |
| 13 | STOP 0.16V PLAY0.2V FF REW 0.6V | ——— |
| 14 | (B) PLAY DUBB 0V (B) REC 4.2V | 5.7V |
| 15 | | |
| 16 | | |
| 17 | FWD 5.4V | 0V |
| 18 | PLAY 5.5V | 0V |
| 19 | (A) (B) PLAY DUBB 0V | 5.6V |
| 20 | RELAY ASO 5.7V (200mS) | 0V |
| 21 | ——— | ——— |
| 22 | MQ 5.5V | 0V |
| 23 | PLAY 5.5V (68mS) | 0V |
| 24 | PLAY 5.5V | 0V |
| 25 | STOP 5.5V (180mS) | 0V |
| 26 | REW. REV 5.6V | 0V |
| 27 | FF. FWD 5.6V | 0V |
| 28 | 6.2V | |

Q802

| | | Others |
|---|---|---|
| 1 | 0V | ——— |
| 2 | 3V | ——— |
| 3 | 5.7V | ——— |
| 4 | STOP, FF 5.7V FWD 6.2V | 0V |
| 5 | STOP, REW 5.7V REV 6.2V | 0V |
| 6 | FF. REV 5.7V | 0V |
| 7 | REC 6.2V | 0V |
| 8 | MQ DET. 6.2V (20mS) | 0V |
| 9 | TIMER REC 5.4V (300mS) | 0V |
| 10 | ACCIDENTAL ERASE A 5.7V | 0V |
| 11 | | |
| 12 | PLAY 3V | |
| 13 | PLAY 0.2V FF. REW 0.6V STOP 0.16V | |
| 14 | STOP 5.7V | 0V |
| 15 | REC 0V | 5.5V |
| 16 | REC 5.5V | 0V |
| 17 | | |
| 18 | REC 5.5V (200mS STANDBY) | 0V |
| 19 | REV 5.5V | 0V |
| 20 | FF. REW STOP 5.6V PLAY 0V REC 4.2V | ——— |
| 21 | FWD 5.5V | 0V |
| 22 | MQ 5.5V | 0V |
| 23 | PLAY 5.5V (68mS) | 0V |
| 24 | PLAY 5.6V | 0V |
| 25 | STOP 5.5V (180mS) | 0V |
| 26 | REW. REV 5.6V | 0V |
| 27 | FF. FWD 5.6V | 0V |
| 28 | 6.2V | ——— |

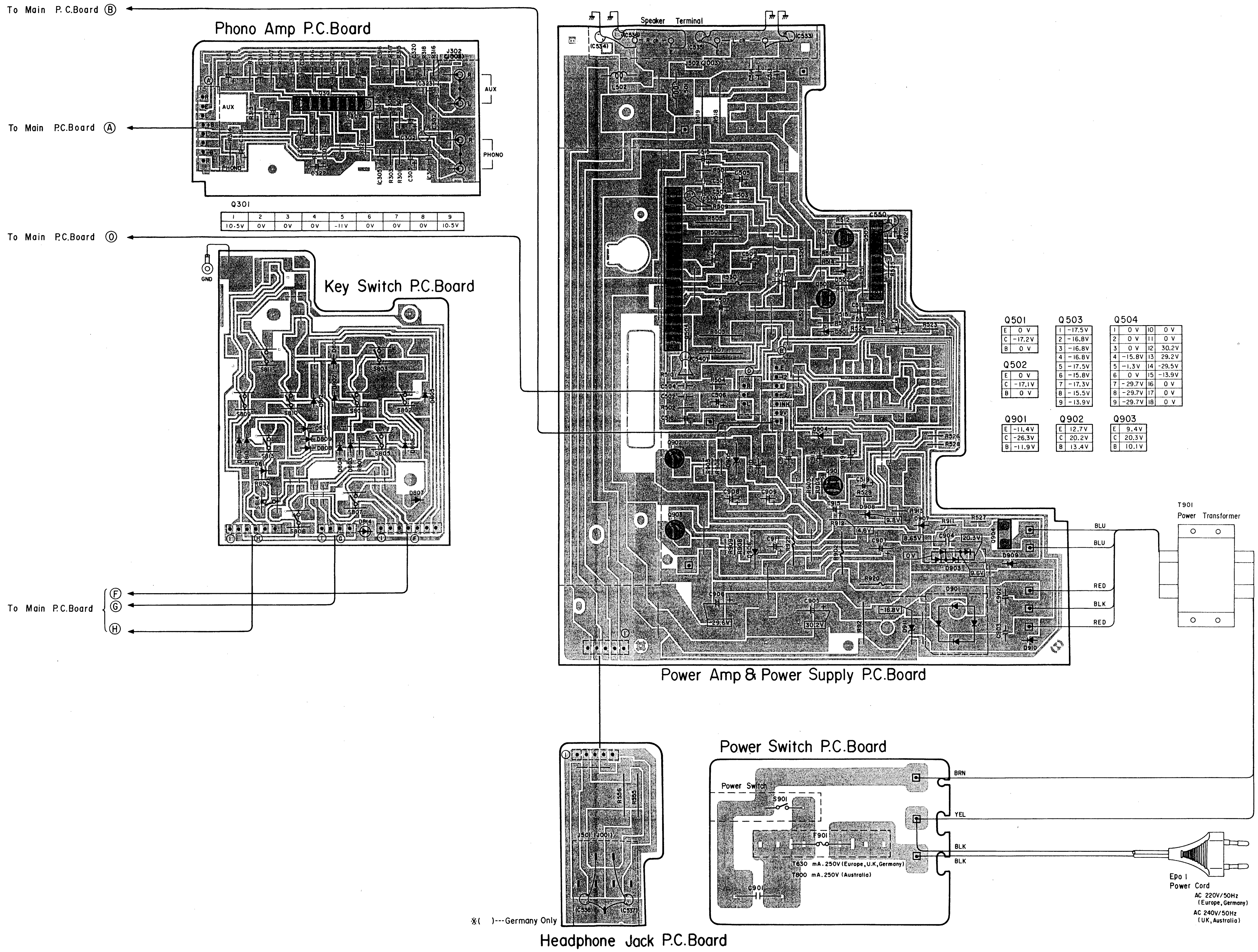
Q803

| | | Others |
|---|---|---|
| 1 | 2.6V | |
| 2 | SPEED DUBB 5.4V | 0V |
| 3 | FF FWD 5.6V SPEED DUBB 5.5V | 0V |
| 4 | REW. REV 5.6V | 0V |
| 5 | PLAY 0V FF. REW STOP/PLAY STOP 5.5V(180mS) | |
| 6 | PLAY 5.5V | 0V |
| 7 | PLAY 0.85V MQ 0.07V | 9.2V |
| 8 | PLAY 6.4V MQ 6.2V | 9.2V |
| 9 | STOP 8.6V | 0.8V |
| 10 | 0V | |
| 11 | PLAY 5.5V (68mS) | 0V |
| 12 | REW 8.2V REV 3.2V | 0V |
| 13 | STOP 0.8V | 0V |
| 14 | FWD 3.2V FF 8.2V | 0V |
| 15 | 0V | |
| 16 | 2.8V | |
| 17 | STOP 9.2V FF. REW 9.1V PLAY 9.0V DUBB 8.8V | |
| 18 | 3.5V | |
| 19 | | |
| 20 | STOP 0.16V PLAY 0.2V FF. REW 0.6V | |
| 21 | 3.6V | |
| 22 | 0V | |
| 23 | 0V | |
| 24 | 4.8V | |

Q804

| | | Others |
|---|---|---|
| 1 | 2.6V | ——— |
| 2 | DUBB 5.4V | 0V |
| 3 | FF. FWD 5.6V DUBB 5.5V | 0V |
| 4 | REW. REV 5.6V | 0V |
| 5 | STOP 5.5V (180mS) | 0V |
| 6 | PLAY, REC PLAY 5.5V | 0V |
| 7 | PLAY 0.9V MQ 0.07V | 9.2V |
| 8 | PLAY 6.4V MQ 6.2V | 9.2V |
| 9 | STOP 8.6V | 0.8V |
| 10 | 0V | ——— |
| 11 | PLAY, REC PLAY 5.5V (68mS) | 0V |
| 12 | REW 8.2V REV 3.2V | 0V |
| 13 | STOP 0V | 0.8V |
| 14 | FWD3.2V FF8.3V | 0V |
| 15 | 0V | |
| 16 | 2.8V | |
| 17 | STOP 9.2V FF. REW 9.1V PLAY 9V DUBB 8.7V | |
| 18 | 3.4V | |
| 19 | | |
| 20 | STOP 0.16V PLAY, REC PLAY 0.2V FF. REW 0.6V | |
| 21 | 3.6V | |
| 22 | 0V | |
| 23 | 0V | |
| 24 | 4.8V | |

# 6. ELECTRICAL PARTS LOCATIONS


To Main P.C.Board Ⓑ
Phono Amp P.C.Board
J302
AUX
To Main P.C.Board Ⓐ
PHONO
To Main P.C.Board Ⓞ
GND
Key Switch P.C.Board
To Main P.C.Board
Ⓕ
Ⓖ
Ⓗ
Speaker Terminal
Power Amp & Power Supply P.C.Board
T901
Power Transformer
BLU
BLU
RED
BLK
RED
Power Switch P.C.Board
Power Switch
S901
F901
T630 mA.250V (Europe,U.K,Germany)
T800 mA.250V (Australia)
C901
BRN
YEL
BLK
BLK
Epo I
Power Cord
AC 220V/50Hz
(Europe,Germany)
AC 240V/50Hz
(UK,Australia)
※( )---Germany Only
Headphone Jack P.C.Board

Q301

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| 10.5V | 0V | 0V | 0V | -11V | 0V | 0V | 0V | 10.5V |

Q501

| | |
|---|---|
| E | 0 V |
| C | -17.2V |
| B | 0 V |

Q502

| | |
|---|---|
| E | 0 V |
| C | -17.1V |
| B | 0 V |

Q503

| | |
|---|---|
| 1 | -17.5V |
| 2 | -16.8V |
| 3 | -16.8V |
| 4 | -16.8V |
| 5 | -17.5V |
| 6 | -15.8V |
| 7 | -17.3V |
| 8 | -15.5V |
| 9 | -13.9V |

Q504

| | | | |
|---|---|---|---|
| 1 | 0 V | 10 | 0 V |
| 2 | 0 V | 11 | 0 V |
| 3 | 0 V | 12 | 30.2V |
| 4 | -15.8V | 13 | 29.2V |
| 5 | -1.3V | 14 | -29.5V |
| 6 | 0 V | 15 | -13.9V |
| 7 | -29.7V | 16 | 0 V |
| 8 | -29.7V | 17 | 0 V |
| 9 | -29.7V | 18 | 0 V |

Q901

| | |
|---|---|
| E | -11.4V |
| C | -26.3V |
| B | -11.9V |

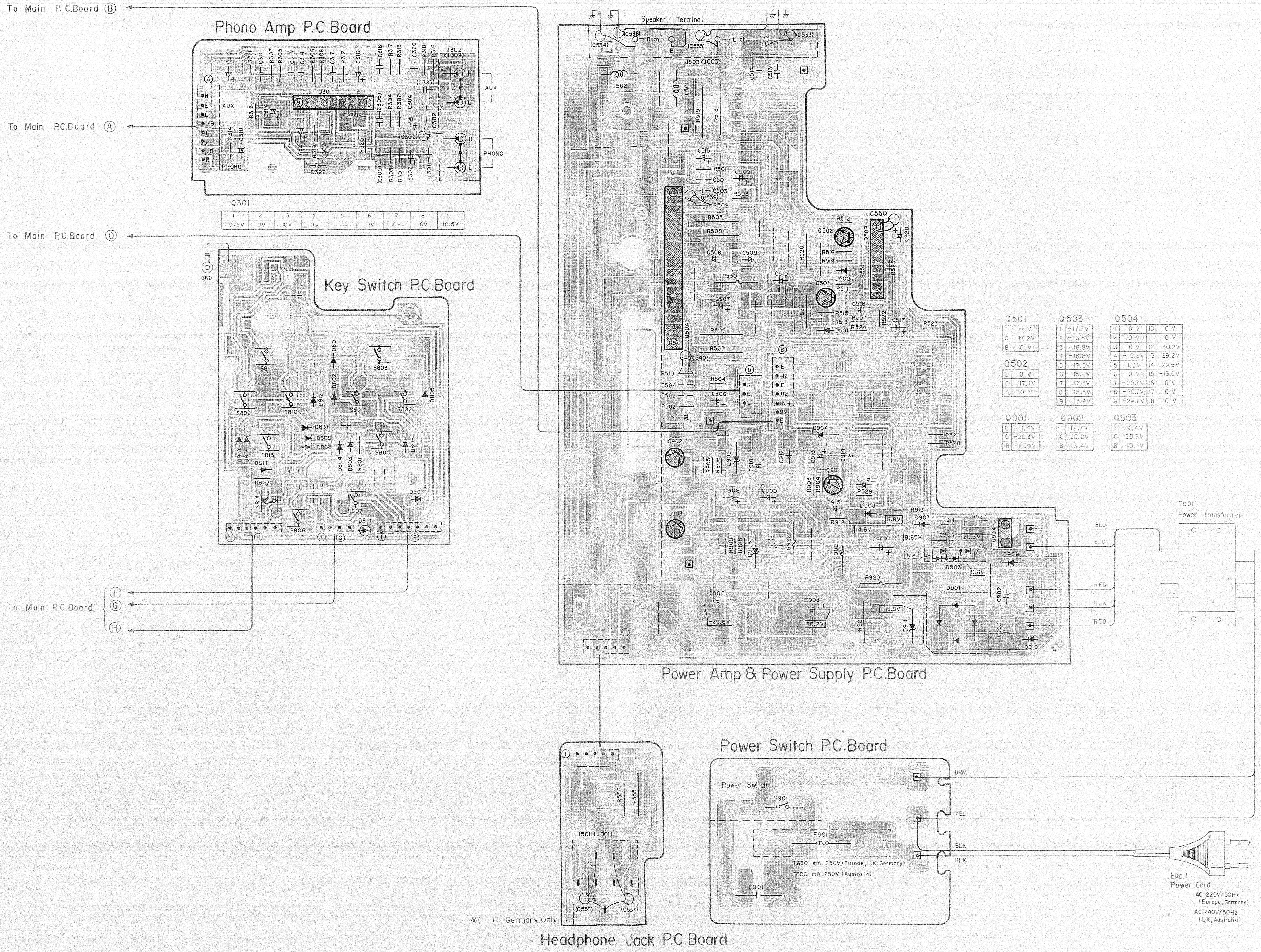
Q902

| | |
|---|---|
| E | 12.7V |
| C | 20.2V |
| B | 13.4V |

Q903

| | |
|---|---|
| E | 9.4V |
| C | 20.3V |
| B | 10.1V |

# 6. ELECTRICAL PARTS LOCATIONS


To Main P.C.Board Ⓑ
Phono Amp P.C.Board
To Main P.C.Board Ⓐ
AUX
PHONO
Q301
J302 (J003)
To Main P.C.Board Ⓓ
GND
Key Switch P.C.Board
To Main P.C.Board Ⓕ Ⓖ Ⓗ
Speaker Terminal
R ch
L ch
J502 (J003)
Power Amp & Power Supply P.C.Board
T901
Power Transformer
BLU
BLU
RED
BLK
RED
Power Switch P.C.Board
Power Switch
S901
F901
T630 mA.250V (Europe, U.K, Germany)
T800 mA.250V (Australia)
C901
BRN
YEL
BLK
BLK
Epo1
Power Cord
AC 220V/50Hz
(Europe, Germany)
AC 240V/50Hz
(U.K, Australia)
Headphone Jack P.C.Board
J501 (J001)
※( )---Germany Only

Q301

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| 10.5V | 0V | 0V | 0V | -11V | 0V | 0V | 0V | 10.5V |

Q501

| | |
|---|---|
| E | 0 V |
| C | -17.2V |
| B | 0 V |

Q502

| | |
|---|---|
| E | 0 V |
| C | -17.1V |
| B | 0 V |

Q503

| | |
|---|---|
| 1 | -17.5V |
| 2 | -16.8V |
| 3 | -16.8V |
| 4 | -16.8V |
| 5 | -17.5V |
| 6 | -15.8V |
| 7 | -17.3V |
| 8 | -15.5V |
| 9 | -13.9V |

Q504

| | | | |
|---|---|---|---|
| 1 | 0 V | 10 | 0 V |
| 2 | 0 V | 11 | 0 V |
| 3 | 0 V | 12 | 30.2V |
| 4 | -15.8V | 13 | 29.2V |
| 5 | -1.3V | 14 | -29.5V |
| 6 | 0 V | 15 | -13.9V |
| 7 | -29.7V | 16 | 0 V |
| 8 | -29.7V | 17 | 0 V |
| 9 | -29.7V | 18 | 0 V |

Q901

| | |
|---|---|
| E | -11.4V |
| C | -26.3V |
| B | -11.9V |

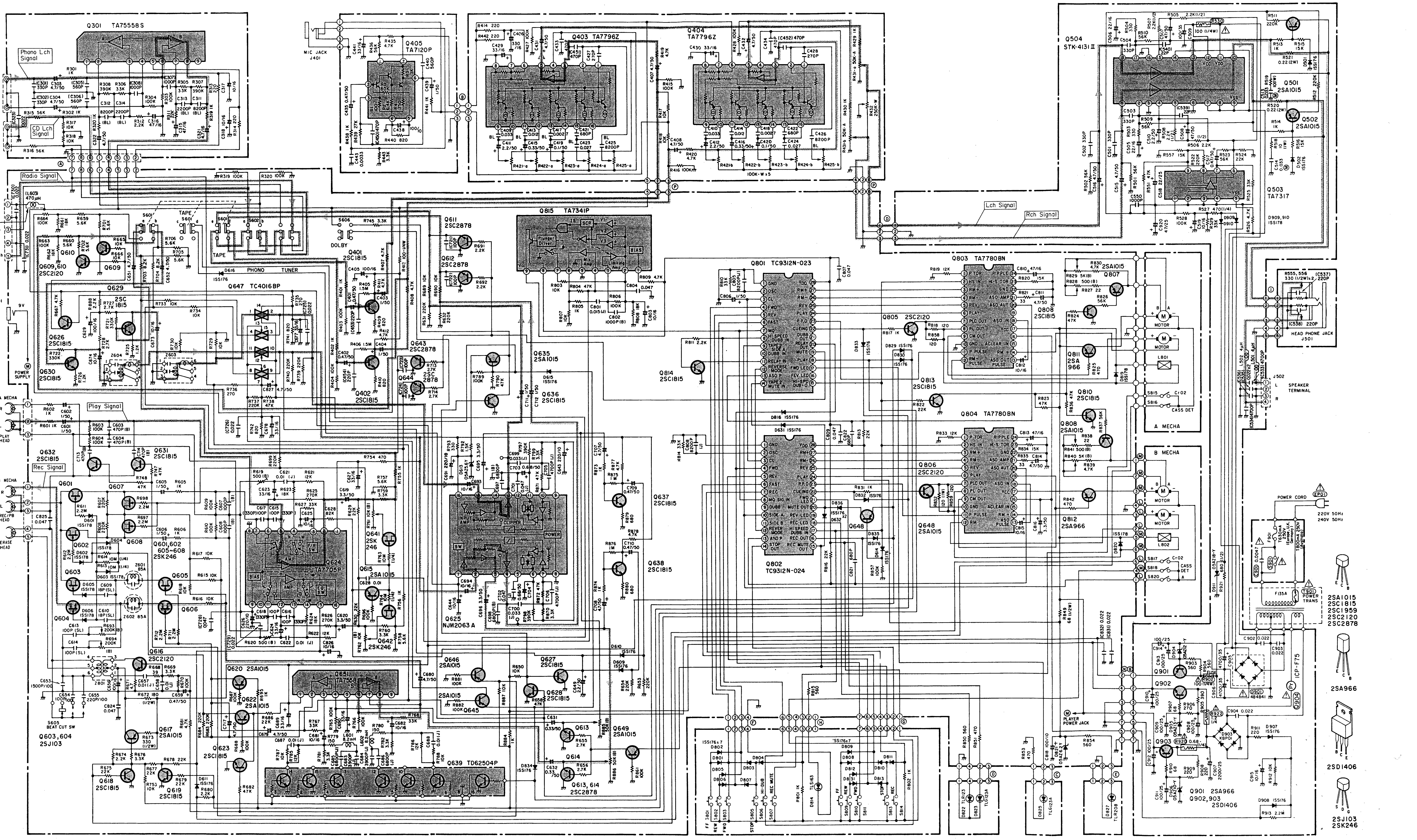
Q902

| | |
|---|---|
| E | 12.7V |
| C | 20.2V |
| B | 13.4V |

Q903

| | |
|---|---|
| E | 9.4V |
| C | 20.3V |
| B | 10.1V |

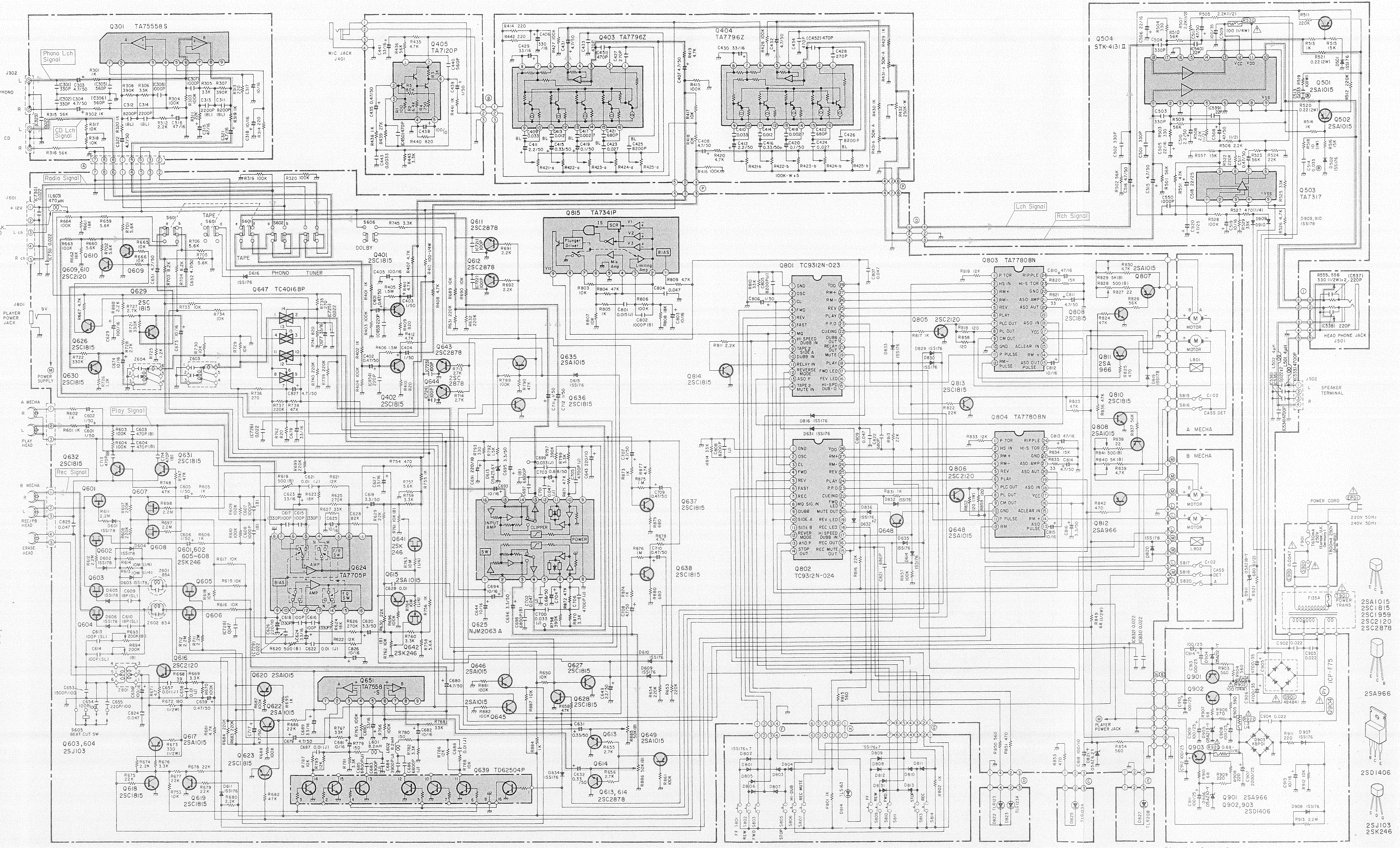
# 7. SCHEMATIC DIAGRAM


Q301 TA7555S
Phono Lch Signal
CD Lch Signal
J302
PHONO
CD
Radio Signal
J601
+12V
Short (Europe U.K. Australia)
L ch
R ch
J801
PLAYER POWER JACK
MIC JACK J401
Q405 TA7120P
Q403 TA7796Z
Q404 TA7796Z
Q504 STK-4131 II
Q501 2SA1015
Q502 2SA1015
Q503 TA7317
Lch Signal
Rch Signal
Q815 TA7341P
Q801 TC9312N-023
Q802 TC9312N-024
Q803 TA7780BN
Q804 TA7780BN
Q807
Q808 2SC1815
Q805 2SC2120
Q806 2SC2120
Q811 2SA966
Q812 2SA966
Q810 2SC1815
Q813 2SC1815
Q814 2SC1815
Q611 2SC2878
Q612 2SC2878
Q401 2SC1815
Q402 2SC1815
Q647 TC4016BP
Q609,610 2SC2120
Q629 2SC1815
Q626 2SC1815
Q630 2SC1815
Q643 2SC2878
Q644 2SC2878
Q635 2SA1015
Q636 2SC1815
Q637 2SC1815
Q638 2SC1815
DOLBY
TAPE
PHONO
TUNER
A MECHA
PLAY HEAD
Play Signal
Q632 2SC1815
Q631 2SC1815
Rec Signal
B MECHA
REC/PB HEAD
ERASE HEAD
Q601
Q607
Q602
Q608
Q603
Q605
Q604
Q606
Q601,602 605~608 2SK246
Q624 TA7705P
Q625 NJM2063A
Q641 2SK246
Q642 2SK246
Q615 2SA1015
Q616 2SC2120
Q603,604 2SJ103
S605 BEAT CUT SW
Q617 2SA1015
Q618 2SC1815
Q619 2SC1815
Q620 2SA1015
Q622 2SA1015
Q623 2SC1815
Q651 TA7558P
Q639 TD62504P
Q646 2SA1015
Q645
Q627 2SC1815
Q628 2SC1815
Q613, 614 2SC2878
Q649 2SA1015
MOTOR
HEAD PHONE JACK J501
SPEAKER TERMINAL J502
CASS DET
A MECHA
B MECHA
POWER CORD
220V 50Hz
240V 50Hz
POWER TRANS
ICP-F75
Q901 2SA966
Q902,903 2SD1406
PLAYER POWER JACK
2SA1015
2SC1815
2SC1959
2SC2120
2SC2878
2SA966
2SD1406
2SJ103
2SK246

※(　)……Germany Only

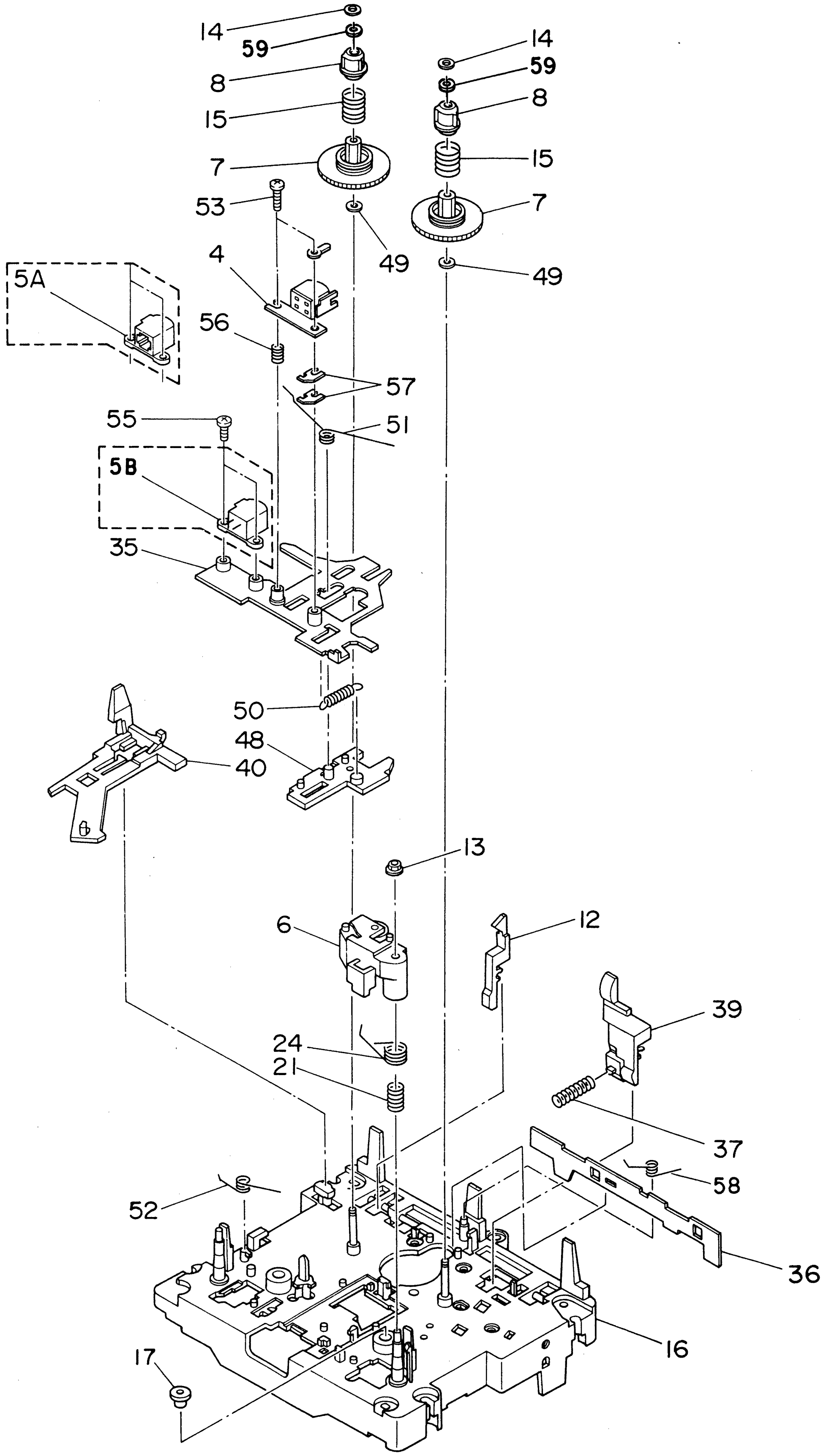
**CAUTION:**
The ⚠ mark, the Location No. circled with oval in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

# 7. SCHEMATIC DIAGRAM


Q301 TA7555S
Phono Lch Signal
CD Lch Signal
PHONO
CD
J302
MIC JACK J401
Q405 TA7120P
Q403 TA7796Z
Q404 TA7796Z
Q504 STK-4131 II
Q501 2SA1015
Q502 2SA1015
Q503 TA7317
Radio Signal
Lch Signal
Rch Signal
Q815 TA7341P
Q801 TC9312N-023
Q802 TC9312N-024
Q803 TA7780BN
Q804 TA7780BN
Q647 TC4016BP
Q624 TA7705P
Q625 NJM2063A
Q651 TA7558S
Q639 TD62504P
Play Signal
Rec Signal
A MECHA
B MECHA
PLAY HEAD
REC/PB HEAD
ERASE HEAD
POWER SUPPLY
PLAYER POWER JACK
HEAD PHONE JACK J501
SPEAKER TERMINAL
MOTOR
POWER CORD
POWER TRANS
DOLBY
TAPE
PHONO
TUNER
Q901 2SA966
Q902,903 2SD1406
2SA1015
2SC1815
2SC1959
2SC2120
2SC2878
2SA966
2SD1406
2SJ103
2SK246
*( ) ...... Germany Only

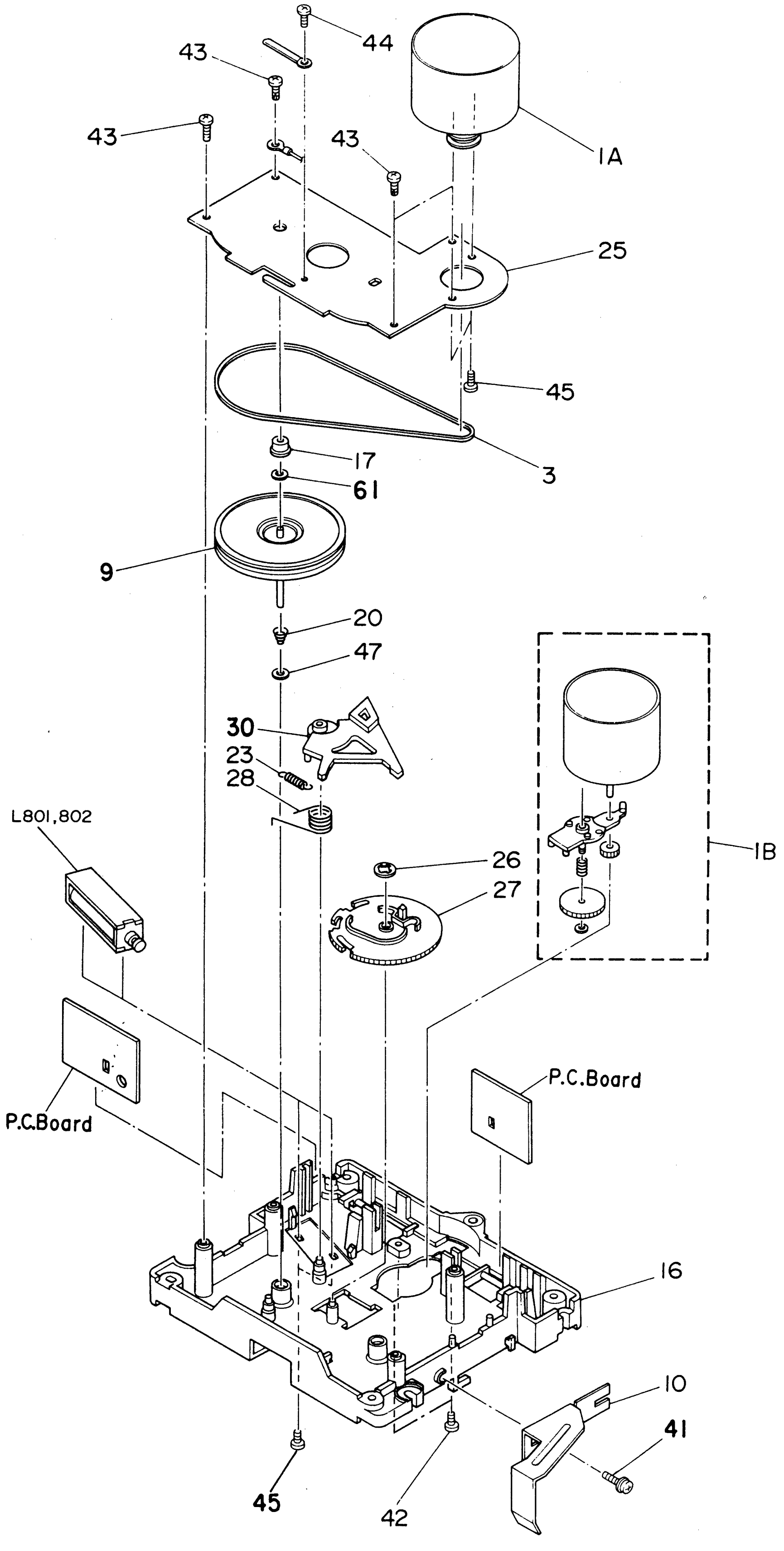
**CAUTION:**
The ⚠ mark, the Location No. circled with oval in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

# 8. MECHANISM EXPLODED VIEW (UPPER)


14
59
8
15
7
53
4
5A
56
55
5B
35
50
48
40
14
59
8
15
7
49
49
57
51
13
6
12
39
24
21
37
58
52
36
16
17

**NOTE:** Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

# 9. MECHANISM EXPLODED VIEW (LOWER)


44
43
43
43
1A
25
45
3
17
61
9
20
47
30
23
28
L801,802
26
27
1B
P.C.Board
P.C.Board
16
10
41
45
42

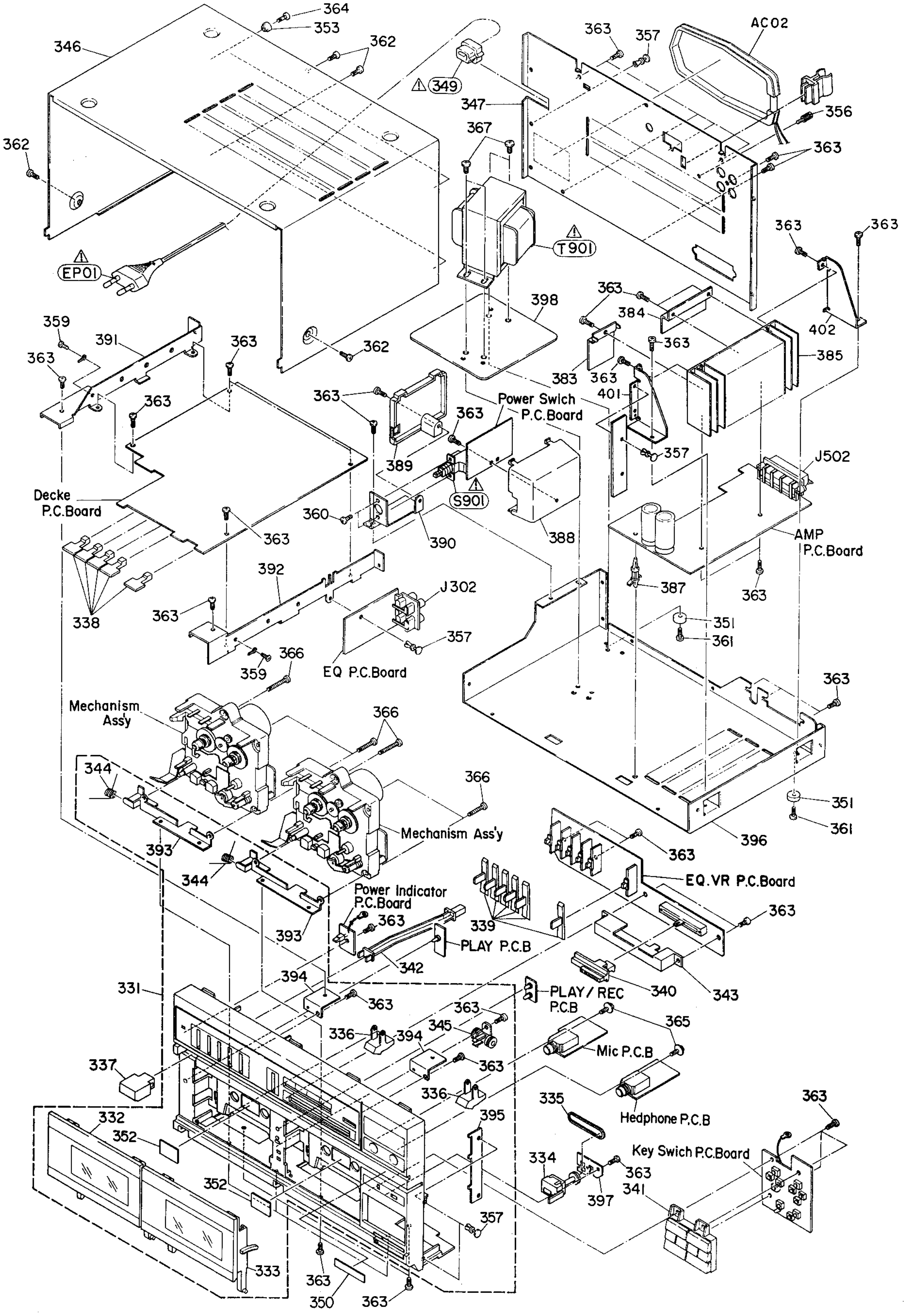
**NOTE:** Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

# 10. MECHANISM PARTS LIST

| Location No. | Part No. | Description |
|---|---|---|
| 1A | 25792049 | Motor Ass'y, Main |
| 1B | 25792050 | Motor Ass'y, Reel |
| 3 | 25759066 | Belt, Drive |
| 4 | 22217499 | Head, REC/Playback, HRPT-499 |
| 5A | 22218263 | Head, Erase, HET-263 (A Mecha) |
| 5B | 22218294 | Head, Erase, HET-294 (B Mecha) |
| 6 | 25797138 | Pressure Roller Ass'y |
| 7 | 25754505 | Reel Drum |
| 8 | 25754436 | Reel Collar |
| 9 | 25797102 | Flywheel Ass'y |
| 12 | 25784369 | Lever, Cassette Switch |
| 13 | 25783430 | Bush |
| 14 | 25766050 | Washer |
| 15 | 25777506 | Spring, Reel |
| 16 | 25792079 | Main Chassis Ass'y |
| 17 | 25725456 | Holder, Flywheel |
| 20 | 25777424 | Spring |
| 21 | 25777520 | Spring |
| 23 | 25776935 | Spring, Back Lever |
| 24 | 25778377 | Spring, Pressure Roller |
| 26 | 20798033 | Ring |
| 27 | 25756539 | Gear, Main Cam |
| 28 | 25778396 | Spring, Cam Lock |
| 30 | 25792057 | Cam Lock Lever Ass'y |
| 35 | 25797139 | Slider Ass'y, Head |
| 36 | 25747261 | Lever, Kickup |
| 37 | 25777507 | Spring, Holder |
| 39 | 25784452 | Lever, Holder |
| 40 | 25784372 | Slider, Eject |
| 41 | 22707361 | Screw, ϕ2.6 x 8mm, PAN |
| 42 | 22708532 | Screw, ϕ2.6 x 6mm, BID |
| 43 | 22707361 | Screw, ϕ2.6 x 8mm, PAN |
| 44 | 22707350 | Screw, ϕ2.6 x 5mm, BID |
| 45 | 22708528 | Screw, ϕ2.6 x 3mm, BID |
| 47 | 25766175 | Washer, Flywheel |
| 48 | 25784488 | Slider, Play |
| 49 | 25766223 | Washer |
| 50 | 25776914 | Spring, Assist |
| 51 | 25778309 | Spring, Return |
| 52 | 25778359 | Spring, Eject |
| 53 | 22708524 | Screw, ϕ2 x 4mm, BID |
| 55 | 22708526 | Screw, ϕ2 x 6mm, BID |
| 56 | 25777137 | Spring, Azimuth |
| 57 | 25735266 | Adjust Spacer |
| 58 | 25778360 | Spring |
| 59 | 25766042 | Washer, Reel Adjust |
| 60 | 25735276 | Adjust Spacer |
| 61 | 25766043 | Washer |

| Location No. | Part No. | Description |
|---|---|---|

# 11. CABINET EXPLODED VIEW


364
353
346
362
363
357
AC02
349
347
356
367
363
362
EP01
T901
363
363
398
363
384
402
359
391
363
362
363
363
385
383
363
363
401
Power Swich
P.C.Board
363
389
357
J502
Decke
P.C.Board
360
S901
363
390
388
AMP
P.C.Board
392
J302
387
363
338
363
351
361
357
366
359
EQ P.C.Board
363
Mechanism
Ass'y
366
344
366
351
361
Mechanism Ass'y
396
393
363
344
EQ.VR P.C.Board
Power Indicator
P.C.Board
363
363
339
393
PLAY P.C.B
342
394
340
343
331
PLAY/REC
P.C.B
363
363
365
336
394
345
Mic P.C.B
337
363
336
363
335
Hedphone P.C.B
332
395
352
Key Swich P.C.Board
334
363
352
397
341
357
333
363
350
363

**NOTE:** Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

# 12. CABINET PARTS LIST

**CAUTION:**
The ⚠ mark, the Location No. circled with oval in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

| Location No. | Part No. | Description |
|---|---|---|
| 331 | 22825532 | Front Panel Ass'y |
| 332 | 25872432 | Cassette Holder Ass'y (A Mecha) |
| 333 | 25872433 | Cassette Holder Ass'y (B Mecha) |
| 334 | 25873312 | Tape Counter |
| 335 | 25755455 | Belt, Counter |
| 336 | 25886812 | Knob, Eject |
| 337 | 22884685 | Knob, Power |
| 338 | 25886799 | Knob, Tape/Phono/Tuner/ CD/Dolby |
| 339 | 25886800 | Knob, 63 H/250 H/1 k/4 k/ 12 kHz |
| 340 | 25886801 | Knob, Volume |
| 341 | 25886813 | Knob Ass'y, Play/FF/Stop · Pause |
| 342 | 25830304 | Knob Shaft, Power |
| 343 | 25872339 | Decoration Plate, Volume |
| 344 | 25775318 | Spring, Eject |
| 345 | 25883722 | Damper Ass'y |
| 346 | 20015482 | Top Cover |
| 347 | 20015514 | Jack Plate (Europe) |
| 347 | 20015515 | Jack Plate (Germany) |
| 347 | 20015516 | Jack Plate (U.K., Australia) |
| 348 | 22757135 | Antenna Holder |
| ⚠ 349 | 25844322 | Cord Bush |
| 350 | 22900536 | Label, Japan (U.K.) |
| 351 | 22874027 | Foot |
| 352 | 25808372 | Reflector |
| 353 | 25875005 | Holder, Player |
| 356 | 20794122 | Screw, Gound |
| 357 | 22705020 | Plastic Rivet, $\phi$3 x 4.5mm |
| 359 | 22707502 | Screw, $\phi$3 x 5mm, FTBID |
| 360 | 22707522 | Screw, $\phi$3 x 6mm, FLDT |
| 361 | 22707842 | Screw, $\phi$3 x 8mm, BID Tap |
| 362 | 22707885 | Screw, $\phi$3 x 8mm, BID Tap |
| 363 | 22707826 | Screw, $\phi$3 x 10mm, BID Tap |
| 364 | 22708033 | Screw, $\phi$3 x 10mm, BID Tap |
| 365 | 22708048 | Screw, $\phi$3 x 10mm, TPAN |
| 366 | 22707843 | Screw, $\phi$3 x 16mm, BID Tap |
| 367 | 22707185 | Screw, $\phi$4 x 8mm, FTBID |

| Location No. | Part No. | Description |
|---|---|---|

# 13. PARTS LIST

**CAUTION:**
The ⚠ mark, the Location No. circled with oval in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

| Location No. | Part No. | Description |
|---|---|---|
| **IC'S, TRANSISTORS & DIODES** | | |
| Q301 | B0350510 | IC, TA75558S |
| Q401, 402 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q403, 404 | B0358475 | IC, TA7796Z |
| Q405 | B0311000 | IC, TA7120P |
| Q501, 502 | A6534060 | Transistor, 2SA1015-GR/BL |
| Q503 | B0324800 | IC, TA7317P |
| Q504 | 22117546 | IC, STK4131-2 |
| Q601, 602 | A6044630 | Transistor, 2SK246-GR-Y/GR |
| Q603, 604 | A6040910 | Transistor, 2SJ103-GR-Y/GR |
| Q605, 606<br>607, 608 | A6044630 | Transistor, 2SK246-GR-Y/GR |
| Q609, 610 | A6321240 | Transistor, 2SC2120-Y |
| Q611, 612 | A6342200 | Transistor, 2SC2878-A-A/B |
| Q613, 614 | A6342200 | Transistor, 2SC2878-A-A/B |
| Q615 | A6534060 | Transistor, 2SA1015-GR/BL |
| Q616 | A6321240 | Transistor, 2SC2120-Y |
| Q617 | A6534060 | Transistor, 2SA1015-GR/BL |
| Q618, 619 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q620, 622 | A6534060 | Transistor, 2SA1015-GR/BL |
| Q623 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q624 | B0357320 | IC, TA7705P |
| Q625 | 22117427 | IC, NJM2063AD |
| Q626, 627 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q628, 629 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q630, 631 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q632 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q635 | A6534060 | Transistor, 2SA1015-GR/BL |
| Q636, 637 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q638 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q639 | B0275020 | IC, TD62504P |
| Q641, 642 | A6044630 | Transistor, 2SK246-GR-Y/GR |
| Q643, 644 | A6342200 | Transistor, 2SC2878-A-A/B |
| Q645, 646 | A6534060 | Transistor, 2SA1015-GR/BL |
| Q647 | B0470162 | IC, TC4016BP |
| Q648, 649 | A6534060 | Transistor, 2SA1015-GR/BL |
| Q651 | B0350510 | IC, TA75558S |
| Q801 | 22117714 | IC, TC9312N-023 |
| Q802 | 22117715 | IC, TC9312N-024 |
| Q803, 804 | B0358317 | IC, TA7780BN |
| Q805, 806 | A6321240 | Transistor, 2SC2120-Y |
| Q807, 808 | A6534060 | Transistor, 2SA1015-GR/BL |
| Q809, 810 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q811, 812 | A6533240 | Transistor, 2SA966-Y-O/Y |
| Q813, 814 | A6317460 | Transistor, 2SC1815NEW-GR/BL |
| Q815 | B0325320 | IC, TA7341P |
| Q901 | A6533240 | Transistor, 2SA966-Y-O/Y |
| Q902, 903 | A6868020 | Transistor, 2SD1406-Y-O/Y |
| ⚠ Q904 | 22118223 | IC Protector, ICP-F75-2.7A |
| D501, 502 | A7160570 | Diode, 1SS176 |
| D601, 602 | A7160610 | Diode, 1SS178 |
| D603, 604 | A7160610 | Diode, 1SS178 |
| D605, 606 | A7160610 | Diode, 1SS178 |
| D609, 610 | A7160570 | Diode, 1SS176 |
| D611 | A7160570 | Diode, 1SS176 |
| D613 | A7112400 | Diode, 05AZ5.6-Y |
| D614, 615 | A7160570 | Diode, 1SS176 |
| D616 | A7160570 | Diode, 1SS176 |
| D631, 632 | A7160570 | Diode, 1SS176 |
| D801, 802 | A7160570 | Diode, 1SS176 |
| D803, 804 | A7160570 | Diode, 1SS176 |
| D805, 806 | A7160570 | Diode, 1SS176 |
| D807, 808 | A7160570 | Diode, 1SS176 |
| D809, 810 | A7160570 | Diode, 1SS176 |
| D811, 812 | A7160570 | Diode, 1SS176 |
| D813 | A7160570 | Diode, 1SS176 |
| D814 | A8636560 | Diode, TLS163 |
| D816 | A7160570 | Diode, 1SS176 |
| D819, 820 | A7160610 | Diode, 1SS178 |
| D821 | A7112480 | Diode, 05AZ6.2-Y |
| D822 | A8601100 | Diode, TLR123 |
| D823, 825 | A8606151 | Diode, TLG123A |

| Location No. | Part No. | Description |
|---|---|---|
| D827 | A8603140 | Diode, TLR208 |
| D829, 830 | A7160570 | Diode, 1SS176 |
| D831, 832 | A7160570 | Diode, 1SS176 |
| D833, 834 | A7160570 | Diode, 1SS176 |
| D835, 836 | A7160570 | Diode, 1SS176 |
| ⚠ D901 | A7671000 | Diode, 4B4B41 |
| ⚠ D903 | 22115737 | Diode, KBP01 |
| D904 | A7113040 | Diode, 05AZ12-Y |
| D905 | A7113120 | Diode, 05AZ13-Y |
| D906 | A7112880 | Diode, 05AZ10-Y |
| D907 | A7160610 | Diode, 1SS178 |
| D908 | A7160570 | Diode, 1SS176 |
| D909, 910 | A7160610 | Diode, 1SS178 |
| D911 | A7113360 | Diode, 05AZ18-Y |

## ELECTRICAL PARTS

| Location No. | Part No. | Description |
|---|---|---|
| L501, 502 | 22210152 | Coil, Choke, 4μH |
| L601, 602 | 22232278 | Coil, Choke, 8.2mH |
| L603 | 22291195 | Coil, Choke, 470μH (Germany) |
| L801, 802 | 22147291 | Solenoid Coil |
| ⚠ T901 | 22224580 | Power Transformer (Europe, Germany) |
| ⚠ T901 | 22224816 | Power Transformer (U.K.) |
| ⚠ T901 | 22224645 | Power Transformer (Australia) |
| S601 | 22196739 | Push Switch, Tape/Phono/Tuner |
| S605 | 22196740 | Slide Switch, Beat Cut |
| S801, 802 | 22196773 | Key Switch, FF/REW |
| S803, 805 | 22196773 | Key Switch, FWD/Stop |
| S806, 807 | 22196773 | Key Switch, HI-DUB/REC Mute |
| S809, 810 | 22196773 | Key Switch, FF/REW |
| S811, 813 | 22196773 | Key Switch, FWD/Stop |
| S814 | 22196773 | Key Switch, REC |
| S815, 816 | 22196704 | Leaf Switch, Chrome/Cassette |
| S817, 818 | 22196704 | Leaf Switch, Chrome/Cassette |
| S820 | 22196704 | Leaf Switch, A Side |
| ⚠ S901 | 22196751 | Push Switch, Power (Europe, Germany, Australia) |
| ⚠ S901 | 22196516 | Push Switch, Power (U.K.) |
| J302 | 22163909 | Jack, US4P Phono/CD |
| J401 | 22198112 | Jack, 6D, MIC |

| Location No. | Part No. | Description |
|---|---|---|
| J501 | 22198177 | Jack, 6D, Headphone |
| J502 | 22162546 | Terminal, 4P, Speaker |
| J601 | 22186009 | Connector Socket, 5P |
| J801 | 22163826 | Jack, 3.5D, Player |
| ⚠ F901 | 22144432 | Fuse, T630mA, 250V (Europe, Germany) |
| ⚠ F901 | 22144512 | Fuse, T630mA, 250V (U.K.) |
| ⚠ F901 | 22144387 | Fuse, T800mA, 250V (Australia) |
| Z601, 602 | 22153229 | Bias Trap Coil, 85 kHz |
| Z603, 604 | 22153278 | Dolby Filter |
| Z801 | 22235274 | Bias Osc. Coil |
| ⚠ EP01 | 22176286 | Power Cord (Europe, Germany) |
| ⚠ EP01 | 22176628 | Power Cord (U.K.) |
| ⚠ EP01 | 22176588 | Power Cord (Australia) |
| EP02 | 22165047 | Fuse Holder |

## CAPACITORS

J = ±5%, K = ±10%, M = ±20%, Z = –20+80%

ABBREVIATIONS: EL = Electrolytic, BL = Barrier Layer,
CD = Ceramic Disk, MY = Myler,
PP = Polypropylene

| Location No. | Part No. | Description |
|---|---|---|
| C301, 302 | 22349331 | CD, 330pF, 50V, K (Germany) |
| C303, 304 | 22488479 | EL, 4.7mfd, 50V, M |
| C305, 306 | 22349561 | CD, 560pF, 50V, K (Germany) |
| C307, 308 | 22349102 | CD, 1000pF, 50V, K (Germany) |
| C311, 312 | 22360543 | BL, 8200pF, 25V, K |
| C313, 314 | 22360536 | BL, 2200pF, 25V, K |
| C315, 316 | 22485470 | EL, 47mfd, 16V, M |
| C317, 318 | 22485100 | EL, 10mfd, 16V, M |
| C319, 320 | 22349101 | CD, 100pF, 50V, K (Germany) |
| C321, 322 | 22488479 | EL, 4.7mfd, 50V, M |
| C323 | 22342223 | CD, 0.022mfd, 50V, Z (Germany) |
| C401, 402 | 22488478 | EL, 0.47mfd, 50V, M |
| C403, 404 | 22488109 | EL, 1mfd, 50V, M |
| C405 | 22485101 | EL, 100mfd, 16V, M |

| Location No. | Part No. | Description |
|---|---|---|
| C406 | 22485331 | EL, 330mfd, 16V, M |
| C407, 408 | 22488479 | EL, 4.7mfd, 50V, M |
| C409, 410 | 22360330 | BL, 0.033mfd, 25V, M |
| C411, 412 | 22488229 | EL, 2.2mfd, 50V, M |
| C413, 414 | 22360545 | BL, 0.012mfd, 25V, K |
| C415, 416 | 22488338 | EL, 0.33mfd, 50V, M |
| C417, 418 | 22360537 | BL, 2700pF, 25V, K |
| C419, 420 | 22488108 | EL, 0.1mfd, 50V, M |
| C421, 422 | 22349681 | CD, 680pF, 50V, K |
| C423, 424 | 22360549 | BL, 0.027mfd, 25V, K |
| C425, 426 | 22360543 | BL, 8200pF, 25V, K |
| C427, 428 | 22349271 | CD, 270pF, 50V, K |
| C429, 430 | 22485330 | EL, 33mfd, 16V, M |
| C431, 432 | 22488479 | EL, 4.7mfd, 50V, M |
| C433, 434 | 22349471 | CD, 470pF, 50V, K |
| C435 | 22488478 | EL, 0.47mfd, 50V, M |
| C437 | 22349471 | CD, 470pF, 50V, K |
| C438 | 22483101 | EL, 100mfd, 10V, M |
| C439 | 22488109 | EL, 1mfd, 50V, M |
| C440 | 22349561 | CD, 560pF, 50V, K |
| C441 | 22485330 | EL, 33mfd, 16V, M |
| C443 | 22349332 | CD, 3300pF, 50V, K |
| C450 | 22349471 | CD, 470pF, 50V, K<br>(Germany) |
| C451, 452 | 22349471 | CD, 470pF, 50V, K<br>(Germany) |
| C453, 454 | 22349221 | CD, 220pF, 50V, K<br>(Germany) |
| C501, 502 | 22349331 | CD, 330pF, 50V, K |
| C503, 504 | 22344331 | CD, 330pF, 50V, K |
| C507, 508 | 22488470 | EL, 47mfd, 50V, M |
| C509 | 22487101 | EL, 100mfd, 35V, M |
| C510 | 22486101 | EL, 100mfd, 25V, M |
| C513, 514 | 22371333 | MY, 0.033mfd, 50V, J |
| C515, 516 | 22488479 | EL, 4.7mfd, 50V, M |
| C517 | 22488478 | EL, 0.47mfd, 50V, M |
| C518 | 22486220 | EL, 22mfd, 25V, M |
| C519 | 22485100 | EL, 10mfd, 16V, M |
| C533, 534 | 22349472 | CD, 4700pF, 50V, K<br>(Germany) |
| C535, 536 | 22342223 | CD, 0.022mfd, 50V, Z<br>(Germany) |
| C537, 538 | 22349221 | CD, 220pF, 50V, K<br>(Germany) |
| C550 | 22349102 | CD, 1000pF, 50V, K |
| C601, 602 | 22488109 | EL, 1mfd, 50V, M |
| C603, 604 | 22349471 | CD, 470pF, 50V, K |
| C605, 606 | 22488109 | EL, 1mfd, 50V, M |
| C607, 608 | 22349102 | CD, 1000pF, 50V, K |
| C609, 610 | 22361180 | CD, 18pF, 50V, J |
| C613, 614 | 22362101 | CD, 100pF, 50V, K |
| C539, 540 | 22361220 | CD, 22pF, 50V, J<br>(Germany) |

| Location No. | Part No. | Description |
|---|---|---|
| C615, 616 | 22362101 | CD, 100pF, 50V, K<br>(Europe, U.K., Australia) |
| C615, 616 | 22349331 | CD, 330pF, 50V, K<br>(Germany) |
| C617, 618 | 22362101 | CD, 100pF, 50V, K<br>(Europe, U.K., Australia) |
| C617, 618 | 22349331 | CD, 330pF, 50V, K<br>(Germany) |
| C619, 620 | 22488339 | EL, 3.3mfd, 50V, M |
| C621, 622 | 22371103 | MY, 0.01mfd, 50V, J |
| C623, 624 | 22485330 | EL, 33mfd, 16V, M |
| C625 | 22485100 | EL, 10mfd, 16V, M |
| C626 | 22483221 | EL, 220mfd, 10V, M |
| C627 | 22485330 | EL, 33mfd, 16V, M |
| C628 | 22371103 | MY, 0.01mfd, 50V, J |
| C629 | 22485101 | EL, 100mfd, 16V, M |
| C631, 632 | 22488338 | EL, 0.33mfd, 50V, M |
| C643 | 22483221 | EL, 220mfd, 10V, M |
| C644 | 22485100 | EL, 10mfd, 16V, M |
| C649 | 22488229 | EL, 2.2mfd, 50V, M |
| C651, 652 | 22488479 | EL, 4.7mfd, 50V, M |
| C653 | 22321114 | PP, 1500pF, 100V, J |
| C654 | 22321110 | PP, 100pF, 100V, J |
| C655 | 22321104 | PP, 220pF, 100V, J |
| C656 | 22485101 | EL, 100mfd, 16V, M |
| C657, 658 | 22371103 | MY, 0.01mfd, 50V, J |
| C659 | 22488478 | EL, 0.47mfd, 50V, M |
| C673, 674 | 22485100 | EL, 10mfd, 16V, M |
| C677, 678 | 22485330 | EL, 33mfd, 16V, M |
| C679, 680 | 22488479 | EL, 4.7mfd, 50V, M |
| C681, 682 | 22485100 | EL, 10mfd, 16V, M |
| C683, 684 | 22371392 | MY, 3900pF, 50V, J |
| C685, 686 | 22371682 | MY, 6800pF, 50V, J |
| C687, 688 | 22371103 | MY, 0.01mfd, 50V, J |
| C689, 690 | 22485330 | EL, 33mfd, 16V, M |
| C691 | 22483221 | EL, 220mfd, 10V, M |
| C693, 694 | 22485100 | EL, 10mfd, 16V, M |
| C695, 696 | 22488339 | EL, 3.3mfd, 50V, M |
| C697, 698 | 22360542 | BL, 6800pF, 25V, K |
| C699, 700 | 22371333 | MY, 0.033mfd, 50V, J |
| C701, 702 | 22371473 | MY, 0.047mfd, 50V, J |
| C703, 704 | 22480008 | EL, 0.68mfd, 50V, K |
| C705, 806 | 22371472 | MY, 4700pF, 50V, J |
| C707, 708 | 22488479 | EL, 4.7mfd, 50V, M |
| C709, 710 | 22488478 | EL, 0.47mfd, 50V, M |
| C711, 712 | 22488109 | EL, 1mfd, 50V, M |
| C713, 714 | 22349471 | CD, 470pF, 50V, K |
| C717 | 22488479 | EL, 4.7mfd, 50V, M |
| C721, 722 | 22349101 | CD, 100pF, 50V, K<br>(Germany) |
| C723, 724 | 22349101 | CD, 100pF, 50V, K<br>(Germany) |

| Location No. | Part No. | Description |
|---|---|---|
| C725, 726 | 22342223 | CD, 0.022mfd, 50V, Z (Germany) |
| C727 | 22342223 | CD, 0.022mfd, 50V, Z (Germany) |
| C728 | 22342473 | CD, 0.047mfd, 50V, Z (Germany) |
| C729 | 22342223 | CD, 0.022mfd, 50V, Z (Germany) |
| C730, 731 | 22342223 | CD, 0.022mfd, 50V, Z (Germany) |
| C801 | 22371153 | MY, 0.015mfd, 50V, J |
| C802 | 22349102 | CD, 1000pF, 50V, K |
| C803 | 22385100 | EL, 10mfd, 16V, M |
| C804 | 22371473 | MY, 0.047mfd, 50V, J |
| C805 | 22371822 | MY, 8200pF, 50V, J |
| C806 | 22488109 | EL, 1mfd, 50V, M |
| C807 | 22342473 | CD, 0.047mfd, 50V, Z |
| C808 | 22371822 | MY, 8200pF, 50V, J |
| C809 | 22342473 | CD, 0.047mfd, 50V, Z |
| C810 | 22483470 | EL, 47mfd, 10V, M |
| C811 | 22488479 | EL, 4.7mfd, 50V, M |
| C812 | 22485100 | EL, 10mfd, 16V, M |
| C813 | 22483470 | EL, 47mfd, 10V, M |
| C814 | 22488479 | EL, 4.7mfd, 50V, M |
| C815 | 22485100 | EL, 10mfd, 16V, M |
| C816 | 22488339 | EL, 3.3mfd, 50V, M |
| C818 | 22483101 | EL, 100mfd, 10V, M |
| C821, 822 | 22349681 | CD, 680pF, 50V, K |
| C823, 824 | 22342473 | CD, 0.047mfd, 50V, Z |
| C825 | 22342473 | CD, 0.047mfd, 50V, Z |
| C826 | 22485100 | EL, 10mfd, 16V, M |
| C827 | 22488479 | EL, 4.7mfd, 50V, M |
| C828 | 22485101 | EL, 100mfd, 16V, M |
| C829 | 22488109 | EL, 1mfd, 50V, M |
| C831, 832 | 22342223 | CD, 0.022mfd, 50V, Z (Germany) |
| ⚠ C901 | 22340226 | CD, 4700pF, 400V, M (Europe, Germany, Australia) |
| ⚠ C901 | 22340229 | CD, 4700pF, 400V, M (U.K.) |
| C902, 903 | 22342223 | CD, 0.022mfd, 50V, Z |
| C904 | 22342223 | CD, 0.022mfd, 50V, Z |
| C905, 906 | 22440629 | EL, 4700mfd, 35V, M |
| C907 | 22486222 | EL, 2200mfd, 25V, M |
| C908, 909 | 22486101 | EL, 100mfd, 25V, M |
| C910, 911 | 22486101 | EL, 100mfd, 25V, M |
| C912, 913 | 22486101 | EL, 100mfd, 25V, M |
| C914 | 22486101 | EL, 100mfd, 25V, M |
| C915 | 22485100 | EL, 10mfd, 16V, M |
| C920 | 22486470 | EL, 47mfd, 25V, M |

| Location No. | Part No. | Description |
|---|---|---|
| **RESISTORS**<br>All resistors are carbon film 1/6W, ±5% unless otherwise noted. K = 1000, M = 1000000 | | |
| R301, 302 | 22584102 | 1K ohm |
| R303, 304 | 22584104 | 100K ohm |
| R305, 306 | 22584333 | 33K ohm |
| R307, 308 | 22584394 | 390K ohm |
| R311, 312 | 22584222 | 2.2K ohm |
| R313, 314 | 22584221 | 220 ohm |
| R315, 316 | 22584563 | 56K ohm |
| R317, 318 | 22584103 | 10K ohm |
| R319, 320 | 22584102 | 1K ohm (PHONO) |
| R319, 320 | 22584104 | 100K ohm (MAIN) |
| R401, 402 | 22584102 | 1K ohm |
| R403, 404 | 22584104 | 100K ohm |
| R405, 406 | 22584155 | 1.5M ohm |
| R407, 408 | 22584472 | 4.7K ohm |
| R409, 410 | 22584821 | 820 ohm |
| R411, 412 | 22584472 | 4.7K ohm |
| R413 | 22555101 | 100 ohm, 1/4W |
| R414 | 22584221 | 220 ohm |
| R415, 416 | 22584104 | 100K ohm |
| R417, 418 | 22584103 | 10K ohm |
| R419, 420 | 22584472 | 4.7K ohm |
| R421 | 22657400 | 100K ohm, W, Variable |
| R422 | 22657400 | 100K ohm, W, Variable |
| R423 | 22657400 | 100K ohm, W, Variable |
| R424 | 22657400 | 100K ohm, W, Variable |
| R425 | 22657400 | 100K ohm, W, Variable |
| R427, 428 | 22584104 | 100K ohm |
| R429, 430 | 22584102 | 1K ohm |
| R431 | 22657313 | 50K ohm, A, Variable, Volume |
| R432 | 22657402 | 250K ohm, W, Variable, Balance |
| R435 | 22584472 | 4.7K ohm |
| R436 | 22584563 | 56K ohm |
| R438 | 22584102 | 1K ohm |
| R439 | 22584273 | 27K ohm |
| R440 | 22584821 | 820 ohm |
| R441 | 22584102 | 1K ohm |
| R442 | 22584221 | 220 ohm |
| R443 | 22584332 | 3.3K ohm |
| R501, 502 | 22584563 | 56K ohm |
| R503, 504 | 22584331 | 330 ohm |
| R505, 506 | 22547222 | 2.2K ohm, 1/2W |
| R507, 508 | 22547222 | 2.2K ohm, 1/2W |
| R509, 510 | 22584563 | 56K ohm |
| R511, 512 | 22584224 | 220K ohm |

| Location No. | Part No. | Description |
|---|---|---|
| R513, 514 | 22584102 | 1K ohm |
| R515, 516 | 22584153 | 15K ohm |
| R518, 519 | 22570250 | 10 ohm, 1W, Metal Film |
| R520, 521 | 22500341 | 0.22 ohm, 2W, Wire Wound |
| R522 | 22584224 | 220K ohm |
| R523 | 22584563 | 56K ohm |
| R524 | 22584223 | 22K ohm |
| R525 | 22584333 | 33K ohm |
| R526 | 22584472 | 4.7K ohm |
| R527 | 22555471 | 470 ohm, 1/4W |
| R528 | 22584104 | 100K ohm |
| R529 | 22584333 | 33K ohm |
| ⚠ R530 | 22500122 | 100 ohm, 1/4W, Fusible |
| R551 | 22584473 | 47K ohm |
| R555, 556 | 22547331 | 330 ohm, 1/2W |
| R557 | 22584153 | 15K ohm |
| R601, 602 | 22584102 | 1K ohm |
| R603, 604 | 22584104 | 100K ohm |
| R605, 606 | 22584102 | 1K ohm |
| R607, 608 | 22584224 | 220K ohm |
| R609, 610 | 22584104 | 100K ohm |
| R611, 612 | 22584225 | 2.2M ohm |
| R613, 614 | 22555106 | 10M ohm, 1/4W |
| R615, 616 | 22584103 | 10K ohm |
| R617, 618 | 22584103 | 10K ohm |
| R619, 620 | 22658756 | 500 ohm, B, Semi-fixed Variable |
| R621, 622 | 22584123 | 12K ohm |
| R623, 624 | 22584183 | 18K ohm |
| R625, 626 | 22584274 | 270K ohm |
| R627 | 22584333 | 33K ohm |
| R628 | 22584823 | 82K ohm |
| R629, 630 | 22584223 | 22K ohm |
| R631, 632 | 22584224 | 220K ohm |
| R650 | 22584103 | 10K ohm |
| R653, 654 | 22584224 | 220K ohm |
| R655, 656 | 22584272 | 2.7K ohm |
| R658 | 22584473 | 47K ohm |
| R659, 660 | 22584562 | 5.6K ohm |
| R661, 662 | 22584183 | 18K ohm |
| R663, 664 | 22584104 | 100K ohm |
| R665, 666 | 22584103 | 10K ohm |
| R667 | 22584472 | 4.7K ohm |
| R668 | 22584390 | 39 ohm |
| R669 | 22584332 | 3.3K ohm |
| R670 | 22584104 | 100K ohm |
| R671 | 22584479 | 4.7 ohm |
| R672 | 22547181 | 180 ohm, 1/2W |
| R673 | 22547331 | 330 ohm, 1/2W |
| R674 | 22584222 | 2.2K ohm |
| R675 | 22584223 | 22K ohm |

| Location No. | Part No. | Description |
|---|---|---|
| R676 | 22584332 | 3.3K ohm |
| R677, 678 | 22584223 | 22K ohm |
| R679 | 22584223 | 22K ohm |
| R680 | 22584222 | 2.2K ohm |
| R681 | 22584472 | 4.7K ohm |
| R682 | 22584473 | 47K ohm |
| R683, 684 | 22584224 | 220K ohm |
| R686 | 22584223 | 22K ohm |
| R687, 688 | 22584104 | 100K ohm |
| R689, 690 | 22584103 | 10K ohm |
| R691, 692 | 22584222 | 2.2K ohm |
| R693, 694 | 22658766 | 200K ohm, B, Semi-fixed Variable |
| R695 | 22584102 | 1K ohm |
| R696 | 22584104 | 100K ohm |
| R697, 698 | 22584225 | 2.2M ohm |
| R699 | 22584224 | 220K ohm |
| R701, 702 | 22584562 | 5.6K ohm |
| R703, 704 | 22584822 | 8.2K ohm |
| R705, 706 | 22584562 | 5.6K ohm |
| R711, 712 | 22584225 | 2.2M ohm |
| R713, 714 | 22584272 | 2.7K ohm |
| R721, 722 | 22584334 | 330K ohm |
| R725, 726 | 22584122 | 1.2K ohm |
| R727, 728 | 22584272 | 2.7K ohm |
| R729, 730 | 22584103 | 10K ohm |
| R733, 734 | 22584103 | 10K ohm |
| R735, 736 | 22584271 | 270 ohm |
| R737 | 22584224 | 220K ohm |
| R738 | 22584473 | 47K ohm |
| R739, 740 | 22584224 | 220K ohm |
| R741, 742 | 22584821 | 820 ohm |
| R745 | 22584332 | 3.3K ohm |
| R747, 748 | 22584473 | 47K ohm |
| R753 | 22584103 | 10K ohm |
| R754 | 22584471 | 470 ohm |
| R755, 756 | 22584102 | 1K ohm |
| R757, 758 | 22584562 | 5.6K ohm |
| R759, 760 | 22584332 | 3.3K ohm |
| R761, 762 | 22658761 | 10K ohm, B, Semi-fixed Variable |
| R763, 764 | 22555106 | 10M ohm, 1/4W |
| R765, 766 | 22584104 | 100K ohm |
| R767, 768 | 22584333 | 33K ohm |
| R779, 780 | 22584151 | 150 ohm |
| R781, 782 | 22584332 | 3.3K ohm |
| R785, 786 | 22584123 | 12K ohm |
| R787, 788 | 22584103 | 10K ohm |
| R789 | 22584104 | 100K ohm |
| R790 | 22584473 | 47K ohm |
| R792 | 22584152 | 1.5K ohm |
| R793 | 22584331 | 330 ohm |

| Location No. | Part No. | Description |
|---|---|---|
| R797, 798 | 22584394 | 390K ohm |
| R799 | 22584332 | 3.3K ohm |
| | | |
| R801, 802 | 22584102 | 1K ohm |
| R803 | 22584103 | 10K ohm |
| R804 | 22584473 | 47K ohm |
| R805 | 22584102 | 1K ohm |
| R806 | 22584104 | 100K ohm |
| R807 | 22584103 | 10K ohm |
| R808 | 22584183 | 18K ohm |
| R809 | 22584472 | 4.7K ohm |
| R810 | 22584333 | 33K ohm |
| R811 | 22584222 | 2.2K ohm |
| R813 | 22584223 | 22K ohm |
| R814 | 22584333 | 33K ohm |
| R815 | 22584561 | 560 ohm |
| R816 | 22584223 | 22K ohm |
| R817 | 22584102 | 1K ohm |
| R818 | 22584121 | 120 ohm |
| R819 | 22584123 | 12K ohm |
| R820 | 22584153 | 15K ohm |
| R821 | 22584330 | 33 ohm |
| R822 | 22584223 | 22K ohm |
| R823, 824 | 22584473 | 47K ohm |
| R825 | 22584471 | 470 ohm |
| R826 | 22584563 | 56K ohm |
| R827 | 22584220 | 22 ohm |
| R828 | 22658756 | 500 ohm, B, Semi-fixed Variable |
| R829 | 22658760 | 5K ohm, B, Semi-fixed Variable |
| R830 | 22584472 | 4.7K ohm |
| R831 | 22584102 | 1K ohm |
| R832 | 22555121 | 120 ohm, 1/4W |
| R833 | 22584123 | 12K ohm |
| R834 | 22584153 | 15K ohm |
| R835 | 22584330 | 33 ohm |
| R836 | 22584473 | 47K ohm |
| R837 | 22584563 | 56K ohm |
| R838 | 22584220 | 22 ohm |
| R839 | 22584472 | 4.7K ohm |
| R840 | 22658760 | 5K ohm, B, Semi-fixed Variable |
| R841 | 22658756 | 500 ohm, B, Semi-fixed Variable |
| R842 | 22584471 | 470 ohm |
| R849 | 22547680 | 68 ohm, 1/2W |
| R850 | 22584561 | 560 ohm |
| R851 | 22584471 | 470 ohm |
| R853 | 22584471 | 470 ohm |
| R854 | 22584561 | 560 ohm |
| R857 | 22584104 | 100K ohm |

| Location No. | Part No. | Description |
|---|---|---|
| R858, 859 | 22555121 | 120 ohm, 1/4W |
| R861 | 22584104 | 100K ohm |
| R869, 870 | 22584332 | 3.3K ohm |
| R871, 872 | 22584473 | 47K ohm |
| R873, 874 | 22584102 | 1K ohm |
| R875, 876 | 22584105 | 1M ohm |
| R877, 878 | 22584472 | 4.7K ohm |
| R879, 880 | 22584681 | 680 ohm |
| R881, 882 | 22584104 | 100K ohm |
| R884 | 22584102 | 1K ohm |
| R885, 886 | 22658764 | 50K ohm, B, Semi-fixed Variable |
| R887 | 22584103 | 10K ohm |
| R888 | 22584222 | 2.2K ohm |
| | | |
| ⚠ R902 | 22500122 | 100 ohm, 1/4W, Fusible |
| R903, 904 | 22584561 | 560 ohm |
| R905 | 22584391 | 390 ohm |
| R906 | 22584271 | 270 ohm |
| R907 | 22584680 | 68 ohm |
| R908, 909 | 22584221 | 220 ohm |
| R910 | 22584680 | 68 ohm |
| R911 | 22584221 | 220 ohm |
| R912 | 22584103 | 10K ohm |
| R913 | 22584225 | 2.2M ohm |
| ⚠ R920 | 22500474 | 0.68 ohm, 1/4W, Fusible |
| R921 | 22547681 | 680 ohm, 1/2W |
| ⚠ R922 | 22500472 | 1.2 ohm, 1/4W, Fusible |

## ACCESSORIES

| | | |
|---|---|---|
| AC01 | 22904939 | Owner's Manual (Europe) |
| AC01 | 22904940 | Owner's Manual (Germany) |
| AC01 | 22904941 | Owner's Manual (U.K., Australia) |
| AC02 | 22243002 | Loop Antenna Coil |
| AC03 | 22197006 | Connector Socket, 5P |
| AC04 | 20842196 | Turntable Stand |
| AC05 | 22124806 | Antenna Cord (Europe, U.K., Australia) |